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PROCEEDINGS.

FIFTH MEETING (for the season,) February 10, 1859.

The Society met this evening by invitation of the Council, for the inauguration of its new Rooms in Clinton Hall, (adjoining the Reading-rooms of the Mercantile Library Association,) consisting of a room for the Library, and a larger hall for public meetings.

The President, on taking the Chair, remarked on the informal character of the meeting, but said he could not allow the occasion to pass without congratulating the Society on its present prosperous condition, which, to those who, with him, had watched it from its earlier stages of development, was eminently satisfactory. He urged upon the gentlemen present the propriety of aiding the Society to establish a Statistical Library, which was so much needed in this city, and for which the Council were making strong efforts. The convenient location of the Rooms, the accessibility of the Library to every one wishing to consult it, and the increased zeal which seemed to animate the management of the Society, gave the fullest assurance of future prosperity.

Archibald Russell, Esq., second Vice-President of the Society, read a paper on the "*Origin and Progress of Societies Devoted to Geography and Statistics.*"

Rev. Joseph P. Thompson, D. D., third Vice-President, excused himself from offering more

than his congratulations to the Society on the evident tokens of its prosperity.

Rev. Joshua Leavitt, D. D., one of the most active early members of the Society, spoke of the value and importance of statistical science, and the necessity that existed in this country, of more accurate information on topics of passing interest. He also alluded to the usefulness of the enterprise, and the renewed exertions now making toward placing the Society on a permanent basis.

Hon. C. P. Daly addressed the meeting on the present condition and prospects of the Society, and on the necessity for laying the foundation of a Library which should command the attention and respect of the scholar, the merchant and the statist.

The President then invited the members and guests to the refreshment room, where they partook of a collation; after which the Society informally adjourned.

SIXTH MEETING, March 3, 1859. The President in the Chair.

After reading and approving the minutes of the last meeting, it was moved and carried that, on account of the inclemency of the weather, the delivery of the Annual Address, by the Rev. Joseph P. Thompson, D. D., be postponed to Thursday, the 17th.

Without transacting any further business, the Society adjourned.

DEPARTMENT OF GEOGRAPHY.

ARIZONA AND SONORA.*

The word Arizona is undoubtedly derived from the Aztec. In the original it is Arizuma, and the change is a corruption into the present word, which is accepted as Spanish. We have no decided information as to its meaning, but the impression among those who have been curious enough to investigate, is that it signifies "silver-bearing." This impression gains strength from the fact that the Arizona mountains are very rich in silver, and that a tradition of a silver mine, called La Arizona, of incredible richness, still exists among the Mexican people near the frontier of our newly-acquired territory.

The proposed Territory of Arizona is bounded on the north by the parallel of latitude $33^{\circ} 40'$; on the east by Texas; on the south by Texas and the Mexican States of Chihuahua and Sonora; and on the west by the Colorado river, which separates it from California. This great region is about 700 miles long, with an average width of about 140 miles, and contains nearly 100,000 square miles.

It embraces within its borders three of the largest rivers on the continent west of the Mississippi, viz: the Rio Grande, the Gila, and the Colorado of the West. The Colorado is the only navigable stream, and by its waters and those of the Gulf of California, Arizona is placed in easy communication with San Francisco and the Pacific coast. The natural outlet for the productions of Arizona must be through a port on the Gulf of California, and the acquisition of Arizona necessitates the possession of Sonora.

That portion of Arizona now occupied, and to which public attention is attracted in so remarkable a degree, has been better known heretofore as the Gadsden Purchase. It was acquired by purchase from Mexico, during the

mission of General Gadsden, at a cost of ten millions of dollars. In the original treaty, as negotiated by General Gadsden, a more southern boundary than the one adopted by the Senate of the United States in confirming the treaty, was conceded by Santa Anna. The line at present is irregular in its course, and cuts off from our territory the head of the Santa Cruz river and valley, the Sonoita valley, the San Bernardino valley, the whole course of the Colorado river from a point twenty miles below the mouth of the Gila river, and, worse than all, the control of the head of the Gulf of California, and the rich and extensive valley of Lake Guzman, besides a large and extremely valuable silver region, well known both to Mexicans and Americans—the Planchas de la Plata. General Gadsden's line included nearly all the territory south of the Gila river to the 31st parallel of latitude—all the advantages above mentioned—and gave us the mouth of the Colorado river.

The Gadsden purchase is attached, by act of Congress, to the territory of New Mexico. At the time of its acquisition there was scarcely any population, except a few scattering Mexicans in the Mesilla valley, and at the old town of Tucson, in the centre of the territory. The Apache Indian, superior in strength to the Mexican, had gradually extirpated every trace of civilization, and roamed uninterrupted and unmolested, sole possessor of what was once a thriving and populous Spanish province.

In the possession of the writer of these notes is a map drawn in 1757, over one hundred years ago, presented by the Society of Jesuits to the King of Spain. The original of this map is now in the archives of the Mexican Government. It was copied, with the notes relating to the territory, and to Sonora, Chihuahua and Sinaloa, by Captain C. P. Stone, late of the United States Army. The map bears the inscription: "*Carte levee par la Societe des Jesuites, dedee au Roi d'Espagne en 1757.*"

The copy of the map, and the accompanying notes, are certified as accurate by the officer of the Mexican Government in charge of the archives.

My information, therefore, upon the early history of this comparatively unknown domain, is accurate and reliable. As early as 1687, a Jesuit missionary from the province of Sonora, which, in its southern portion, bore already the impress of Spanish civilization, descended the valley of Santa Cruz river to the Gila. Passing down the Gila to its mouth, after exploring the country, he retraced his steps, penetrated the

* The Geography and Resources of Arizona and Sonora. An Address before the American Geographical and Statistical Society, by the Hon. Sylvester Mowry, 3rd February, 1859.

country north of the Gila river for some distance, and ascended the Salinas or Salt river, and other northern branches of the Gila. The explorations of this energetic priest did not stop here. Proceeding east, he explored the valley of the San Pedro and its branches; thence along the Gila to the Mimbres, and probably to the Rio Grande and the Mesilla valley. Filled with the enthusiasm of his sect, he procured authority from the head of the order in Mexico, and established missions and settlements at every available point.

The reports of the immense mineral wealth of the new country, made by the Jesuits, induced a rapid settlement. There are laid down on the map before me more than forty towns and villages. Many of these were of considerable size. There were a few north of the Gila, and several on the lower Gila, near the Colorado. The Santa Cruz and its tributary valleys teemed with an agricultural and mining population. Thousands of enterprising Spaniards cultivated the rich valley of the San Pedro, and scattered settlements flourished at every suitable stream and spring at the foot of the mountains towards the Rio Grande.

In the western part of the territory were the missions of St. Pierre, St. Paul, St. Matthias, St. Simond, St. Francisco, Merci, the ranches of Eau Cheri, Eau de la Lune, and others; on the Santa Cruz the missions of San Xavier del Bac, Santiago, San Cayetano and San Philipe, the towns of Tucson, Tubac, Regis, San Agusta, and many others. San Xavier del Bac is still in existence. It is a mission church of great size and beauty, magnificently ornamented within; \$40,000 in solid silver served to adorn the altar. Upon the San Pedro river, where the missions of St. Marco, San Salvador, San Pantaleon, Santa Cruz, and the towns of Quiduria, Rosario, Eugenia, Victoria and San Fernando—the latter at the mouth—with many more. To the east some small settlements were found on the Valle del Sauz, on the Mimbres, at the copper mines north of the Mimbres, and to the south the immense grazing and stock-raising establishment of San Bernardino, where since have been raised hundreds of thousands of cattle and horses. The Indians in the vicinity of the missions were reduced first to obedience by the Jesuits, and then to slavery by the Spaniards.

The notes referred to above contain the names and localities of more than a hundred silver and gold mines, which were worked with great success by the Spaniards. The survey of the Jesuit priest, about 1687, was repeated in 1710, with renewed discoveries, and consequent accession

of population. From this time up to 1757 the conquest and settlement of the country was prosecuted with vigor, both by the Jesuits' Society and Spanish Government.

The missions and settlements were repeatedly destroyed by the Apaches, and the priests and settlers massacred or driven off. As often were they re-established. The Indians at length, thoroughly aroused by the cruelties of the Spaniards, by whom they were deprived of their liberty, forced to labor in the silver mines with inadequate food, and barbarously treated, finally rose, joined with tribes who had never been subdued, and gradually drove out or massacred their oppressors. A superior civilization disappeared before their devastating career, and to-day there is scarcely a trace of it left, except wide-spread ruins, evidences, everywhere, of extensive and hastily deserted mining operations, and the tradition of the country. The mission of San Xavier del Bac, and the old towns of Tucson and Tubac, are the most prominent of these remains.

From 1757 down to 1820, the Spaniards and Mexicans continued to work many valuable mines near Barbacora, and the notes in my possession speak of many silver mines, most of which contained a per centage of gold. "The San Pedro gold mine, in 1748, was worked with extraordinary success." Among the mines anciently worked, as laid down in the authorities heretofore referred to, were the Dolores, San Antonio, Casa Gordo, Cabrisa, San Juan Baptista, Santa Anna, (which was worked to the depth of 120 yards,) Rosario, Cata de Agua, Guadalupe, Connilla, Prieta, Santa Catarina, Guzopa, Hurstano, Arpa, Descuhidara, Nasco-sare, Arguage, Churinababi, Huacal, Pinal, and a great number of others, which it would only be tedious to mention.

Every exploration within the past few years has confirmed the statements of the ancient records. The testimony of living Mexicans, and the tradition of the country, all tend to the same end. Colonel A. B. Grey, Colonel Emory, Lieutenant Michler, Lieutenant Parke, the Hon. John R. Bartlett, late of the United States Boundary Commission, all agree in the statement that the territory has immense resources in silver and copper.

The Hon. John R. Bartlett says of the "Salinas," one of the northern branches of the Gila, that it alone will supply food for a great state. It must be recollected, in this connection, that the great mineral wealth of Arizona will call for and amply repay for the redemption and expensive cultivation of all the available lands, and that irrigation produces immensely great-

er crops than the other method of planting. Throughout the whole of Utah, irrigation has been resorted to with the greatest success. The soil in Utah, in no place that the writer saw it, could in any way be compared to that of the bottom lands of Arizona.

Captain Whipple, in his valuable report of exploration for the Pacific railroad, published by order of Congress, describes crossing the upper part of this region, and which is watered by the Rio Verde and Salinas. He fully sustains me in my remarks on those rich valleys.

The notes above referred to, in the possession of the writer, speak of great farming and grazing establishments scattered over the whole face of the territory, between 1610 and 1800, which produced abundant crops of cereals, fruits and grapes. These statements are confirmed by the testimony of Major Emory and his report, where he enumerates several of the most extensive—by Gray, Bartlett, Parke, and Colonel Bonneville. Many of the ranches, deserted by the Mexicans on account of the Apache Indians, have upon them large, well-built adobe houses, which must have cost the builders thousands of dollars. Many of these have been occupied under squatter titles by emigrants within the last few years. Of others, only the ruins remain, having been destroyed by the depredations of the Indians, or by the heavy rains of succeeding years.

The country east of the Rio Grande is a great plain, broken only by the Sacramento and Gaudalupe mountains. Except in the towns on the river, there is no population. The Mescalero Apaches have, until lately, made settlement unsafe. The establishment of Fort Stanton, and the activity of the United States troops, have, however, reduced this once formidable tribe in number and spirit, so that an early settlement of the fine country in the vicinity of the Sacramento mountains may be expected. A number of bold, clear streams, alive with trout and other fish; a good proportion of arable land, and an inexhaustible supply of oak, pine, hackberry, and other timber, are here found. In the Organ mountains, opposite the Mesilla valley, there are silver mines of great value. One of these, the old Stevenson mine—now known as the Fort Fillmore mine—has been purchased by New York capitalists, and preparations are making to develop its undoubted wealth.

The Rio Grande valley, including the well known Mesilla, contains a large extent of unoccupied arable land, with plenty of water for irrigation. Lately the protection afforded by United States troops has enabled the people to cultivate in safety; and during the last year

nearly 100,000 bushels of grain were raised in the valley, besides a large number of cattle and horses. It is worthy of remark, that the settlements here, although mostly Mexican, have been made since the United States acquired the territory, and that the lands are held under American title. The population is quiet, well behaved, and thoroughly American in feeling. It is estimated, and I believe correctly, that at least 50,000 people can be settled on the Rio Grande within the Arizona boundaries, and there are many attractions for the farmer and stock-raiser.

West of the Rio Grande the country is a succession of *mesas* or table lands, ascending gently for nearly ninety miles to the Sierra Madre, and thence westward for five hundred miles, gradually descending until they reach the Gulf of California. This extensive plateau, south of the Gila, is broken by two well defined ranges of mountains, the Chir-aca-hui and Santa Rita, and by a number of isolated peaks, which assume something the form of a sugar-loaf, and are called by the Mexicans Picahos and Peloncillos.

The sun never shone on a finer grazing country than upon the three hundred miles west of the Rio Grande. The traveler has before him throughout this entire distance a sea of grass, whose nutritious qualities have no equal; and the stock-raiser in January sees his cattle in better condition than our Eastern farmer his stall-fed ox.

Ninety miles west of the Rio Grande is the Mimbres river and valley. Passing over the dividing ridge of the Sierra Madre, with so gentle an ascent and descent as to make it almost imperceptible, you descend into a wide and beautiful valley, which, at no distant day, will support a large population. The banks of the river are covered with a fine growth of cottonwood; and above the usual crossing for emigrants, wild grapes and berries are found in great profusion. The Santa Rita del Cobre copper mine, of ancient fame, and a little to the north-west of the Mimbres, has lately been reopened by a capitalist, who has already begun to reap the reward of his enterprise. It is claimed that the superior malleability and ductility of this copper must make the demand for it very great. The Mimbres river sinks before reaching the line of Mexico. Some statements, which I have never been able to authenticate, make it flow, in very rainy seasons, into Lake Guzman.

The Suance or Valle de Sauz is the next valley on the line of the emigrant road. The waters of this stream are very limited and inter-

mittent. As it approaches the Gila the valley becomes better, but it will never be available for extensive agriculture.

The San Pedro river and valley, 250 miles west of the Rio Grande, is, *par excellence*, the agricultural district south of the Gila. The valley is wide, very rich, and considerably over 100 miles in length. There is, near the junction of the San Pedro with the Gila, and at the mouth of the Arivypa, a most beautiful and fertile region. A fine growth of ash covers the valley. The Santa Rita mountains, which separate the San Pedro and Santa Cruz, contain inexhaustible supplies of pine and oak, besides untold millions of the precious metals. A military post of four companies at the mouth of the Arivypa would open this entire country to settlement.

Still following the emigrant and mail road fifty miles, we come to the old Mexican town of Tucson and the valley of the Santa Cruz. Like most of the streams, the Santa Cruz is intermittent, sinking and rising at irregular intervals. A portion of this valley is covered with a heavy growth of cottonwood. The mountains in the vicinity contain pine and oak, and the extensive tracts of grazing lands, south to the Mexican line, are covered thickly with the mesquit—the best fuel in the world. The town of Tucson now contains about a thousand inhabitants. It once had three thousand, but the Indians, who desolated the whole of the territory, had driven away all but about two hundred at the time of the Gadsden purchase. Nine miles from Tucson, as you go up the valley of the Santa Cruz, is the old mission church of San Xavier, to which I have alluded elsewhere. It is still surrounded by a Papago Indian village, a few tame Apaches, and a few whites also live under the shadow of its towers. Incredible as the statement may seem, the church of San Xavier, with its elaborate facade, its dome and spires, would to-day be an ornament to the architecture of this great metropolis. No better evidence is needed of the resources and former prosperity of Arizona than is to be found in the now deserted missions of San Xavier and Tumacacori.

The town of Tubac, fifty miles south-east of Tucson, which now boasts a population of several hundred, was entirely deserted up to 1855, when it was re-occupied in part by the Sonora Exploring and Mining Company. They claim the town, and have given permission to a number of emigrants to occupy the old houses, and build new ones. Over what was once the towers of the barracks of the Mexican troops, now floats a banner bearing the arms of peace, a

hammer and pick, the insignia of the company; and in the rooms beneath, which once echoed to the tread of the successful Apache fighter, are now sold the calicoes and cotton goods of Lowell, and all manner of Yankee notions. The great Huntzelman mine, the mines of Arivaca, Sopori and Santa Rita, are within a circle of twenty miles from Tubac.

Three miles from Tubac is the mission of Tumacacori. Its venerable walls now shelter political exiles from Sonora, and a few enterprising Germans; and its rich lands are cultivated by the American squatter. Twelve miles farther up the Santa Cruz is the Rancho of Calabazas, claimed as the property of the Gandara family, of Sonora. The extensive buildings are occupied by American families; and the blacksmith's forge is installed in a room once dedicated to more delicate uses.

The Sonoita valley, which opens into the Santa Cruz, near Calabazas, is the only one in any degree protected by the United States troops. It is about fifty miles long, in no place exceeding a mile in width, and generally much narrower. When I passed up it to Fort Buchanan, the whole valley was golden with grain. On several of the farms two crops were raised last year, wheat and corn, wheat and beans, and other vegetables. The farmer during the past year found a ready market for his produce, his purchasers being the troops and the Overland Mail Company. This valley is almost entirely occupied by an intelligent and adventurous American population.

The Santa Cruz and San Pedro approach each other near the Mexican line; and by way of Santa Cruz, a Mexican town at the head of the valley in Sonora, you can pass from one to the other with ease. The whole region between the Rio Grande and the Santa Cruz is broken with conical-shaped hills and mountains, called by the Mexicans *peloncillos*. At the foot of these hills are found springs, which afforded water to the immense herds of cattle and horses which once covered the country; and at many of these springs are found the ruins of buildings occupied by the herders. The hills are covered to the top with the gramma, and other nutritious grasses.

Twenty miles east of the Sonoita valley, and just north of the town of Santa Cruz, is one of the richest silver regions of Arizona.

The Wachupe mountain is believed to be inexhaustible in silver. The San Antonio and Patagonia mines, lately opened, promise a rich yield to their owners. One of these is of especial value, yielding, besides a large percentage of silver, 53 per cent. of lead, which is pur-

chased readily by the surrounding mining companies, to be used in reducing their ores.

The once celebrated Compadre mines, lately re-discovered, are in this vicinity. The present fortunate proprietors found them after long and painful search. The shafts were found carefully concealed, partially filled with rubbish; and thirteen furnaces in tolerable preservation, prove how extensively the mines were once worked by the Spaniards. Here, as in the whole of Arizona, the work of prospecting and exploring has but just begun. The ores of this district are principally argentiferous galena.

West of the Santa Cruz, and south of the valley of the Gila to the Colorado river, the territory is generally an irreclaimable desert. Its mountains abound in the precious metals, and a sufficiency of water for mining operations can usually be obtained without exorbitant expense. The celebrated Ajo copper mine, now known as the Arizona copper mine, is in this district.

The valley of the Gila river, whose waters, flowing from east to west, divide the territory nearly in the centre, 400 miles long, can in most places be brought under cultivation to a greater or less extent.

Since the discovery of gold, a number of farms have been opened, and hundreds of acres of rich land put under cultivation. The Gila empties into the Colorado, 25 miles above the head of the Gulf of California. It is well to observe here, that the difference in soil in different latitudes has not been sufficiently appreciated. The same soil which, under the climate of Oregon is barren and worthless, becomes, under the more genial sun of Arizona, fruitful, and, when irrigated, produces the same extraordinary crops as California.

The land cultivated by the Pimos on the Gila seems inexhaustible. Year after year they cultivate the same crops on the same land with nothing but water to enrich it, and there is no sign of failure.

The valley known as La Florida, near the mountain of the same name, in longitude 109°, is worthy of especial mention, as having at its head the ruins of a once flourishing town. A large population will again occupy it at no distant day. But little is known of the country north of the Gila. It is very mountainous, but contains several valleys of considerable size, nearly all of which bear the impress of an ancient and superior civilization. The principal northern tributaries of the Gila are: the Salado, the Tuberoso, the San Carlos, and the San Francisco, (sometimes called the Alamos.) The Salado, according to my informant, *Marcial*, an

Apache Chief, has six small branches—four flowing from the east, two from the west. The Salado is the largest of all these streams, and has its source about latitude 34° in the Sierra Blanca.

On all of these streams the Apache Indian cultivates crops, principally of corn. The band known as the Coyetero, Pinal, or Sierra Blanca, cultivate most, although they have had the least intercourse with the whites.

The Indians of Arizona are best classed as friendly and hostile. The friendly Indians are the Pimos, Maricopas, Papagos and Yumas, with a few scattering miserable tame Apaches. The Pimos and Maricopas occupy a beautiful and fertile tract on the Gila, 180 miles from its junction with the Colorado. A brave and hospitable race, they live in villages, and cultivate the arts of peace. Their regular fields, well-made irrigating ditches, and beautiful crops of cotton, wheat, corn, pumpkins, melons and beans, have not only gladdened the eye, but also given timely assistance to the emigrants who have traversed Arizona on their way to the Pacific. The costume of the Pimos is extremely simple, only covering their loins, and a small straw hat, except in the case of the chiefs, who wear a sort of pantaloons of coarse cotton cloth. The Pimos and Apaches wage hereditary and fierce war, in which the Pimos are generally the victors. So high were their services valued by the Mexican government, as a barrier to the incursions of the Gila Apaches, that whenever they visited the Mexican towns, the authorities treated them with marked hospitality and kindness. The Maricopas live near the Pimos, and by contiguity and intermarriage have become similar in their customs. The Papagos resemble, but are inferior to the Pimos; do not cultivate so much, and live in scattered villages in the central and western parts of the territory.

The Apaches are classified under their modern names: the Mescaleros, east of the Rio Grande; the Mimbres, Mogollones, Chiracahuis, Coyeteros or Pinaleros, Sierra Blancas, and the Tontos. In the order I have mentioned them, west from the Rio Grande, all of these have their homes north of the Gila, except the Chiracahuis. Velasco says these tribes have no fixed residence, no common society, no positive antecedents; they are best compared to the prairie wolf, sneaking, cowardly, revengeful, quick to assassinate the weak, and to fly from or yield to the strong. It is impossible for one who has not seen Northern Mexico, to imagine the desolation they have made in a country where nature has done so much. The

name Infeliz Sonora—most unhappy—given by all the old writers, is most painfully true; from the Gila, in latitude $32^{\circ} 30'$, to Guaymas, in latitude 28° , their ravages are everywhere visible. Horrible as is the statement, more than one-fourth of the Apaches of to-day are Mexican captives, or their descendants. Not only ranches, and villages, and towns, but whole districts, have been depopulated, and the work is still going on. In small parties, and by different mountain passes, they descend into Sonora, surprise and attack a train of travelers or a town, massacre the men, and carry off the women, with such booty as they can hastily seize, to their haunts on the Gila.

The whole number of Apache warriors does not exceed two thousand. I have investigated this subject with probably more care than any other person, and am satisfied the number is rather more than over the truth.

The Nevajoes are included by Velasco among the Apaches. They live in New Mexico along the 34th parallel, north latitude.

The Yumas, the remains of a once powerful tribe, live on the Colorado, near the Gila; they are quiet; sufficiently agricultural to subsist. A few years will leave only their name.

The climate of Arizona, except on the Lower Gila and the Colorado, is delicious; never extremely hot, with cool summer nights, it offers great attractions to those who desire more genial skies than those of the North. Snow never lays in the winter, seldom falls; frost is rare, though the nights are often cold, seldom freezing. The season for cultivating is long, fruits blooming in February and March. Cotton, corn, wheat, barley, tobacco, melons, grapes, peaches, and all the vegetables, yield profuse crops throughout the territory. The grape of the Rio Grande valley has no superior, and wine of good quality is manufactured from it. The rainy season in Arizona is from June to September, inclusive.

Professor Henry has, I believe, demonstrated that no rain falls in Arizona or Sonora. I have not seen his paper, but understand it is a beautiful theory. It is much to be regretted, for his sake, although not for the country, that the facts are against it. Cultivation in Arizona is by irrigation. It is believed by those who are capable of judging, that, with subsoil plowing, good crops can be obtained, and the results of one year are quoted in support of the theory. It will take a series of years to prove it satisfactorily to the farmer. The yield throughout Arizona is two crops from the same land in each year.

The population of Arizona to-day exceeds

ten thousand souls, exclusive of Indians; two-thirds of it is established on the Rio Grande, in the towns of Mesilla, Las Cruces, La Mesa, Don Ana, Amoles, Santa Tomas, Santa Barbara, Pichacho, and the surrounding ranches. The American population of the territory is not far from two thousand—this is rapidly increasing, and the ensuing spring will see it vastly increased. The gold discoveries, the overland mail—which runs throughout the entire length of Arizona—the large amount of capital invested in the silver mines, together with the increasing movement westward of our people, will add largely to the already vigorous and enterprising population of the new territory.

The Gadsden purchase was not originally an integral part of New Mexico; it was acquired years after the treaty of Gaudalupe Hidalgo, and was only attached to that territory as a temporary expedient. It must also be remembered that the Gadsden purchase, with the portion of New Mexico which it is proposed to include within the limits of the territory of Arizona, is separated from New Mexico proper by natural boundaries; that it derives no benefit from the present connection; and that any opposition to the desired legislation arises from the Mexican population, which fears the influence of a large American emigration. Moreover, New Mexico contains upwards of 200,000 square miles, and its organic act provides for its partition; showing clearly that Congress anticipated, at no remote day, the settlement of the country by an American population, and its erection into several territories and states. The only effect of the present connection of Arizona with New Mexico is to crush out the voice and sentiment of the American people in the territory; and years of emigration, under present auspices, would not serve to counterbalance or equal the influence of the 60,000 Mexican residents of New Mexico. New Mexico has never encouraged American population.

As a matter of state policy, the organization of Arizona is of the first importance. Situated between New Mexico and Sonora, it is possible now to make it a thoroughly American State, which will constantly exert its influence in both directions to nationalize the other two. New Mexico is at present thoroughly Mexican in its character and vote. Sonora, if we acquire it at once, will be the same. By separating Arizona from it, and encouraging an American emigration, it will become "the leaven which shall leaven the whole lump." By allowing it to remain attached to New Mexico, or by attaching it to Sonora, when acquired, the American influence will be swallowed up in the great

preponderance of the Mexican vote. The Apache Indian is preparing Sonora for the rule of a higher civilization than the Mexican. In the past half century, the Mexican element has disappeared from what is now called Arizona, before the devastating career of the Apache. It is every day retreating further south, leaving to us, (when it is ripe for our possession,) the territory without the population.

The American population is mostly concentrated in the centre of the territory, in and near the Santa Cruz valley, and on the lower Gila, at the gold mines. The Overland Mail Company, by the establishment of their stations at intervals rarely exceeding twenty miles, have much facilitated intercourse and travel; and the emigration of this year will cluster around these stations, pouring a line of villages across the continent; in the language of the President, "a chain of American citizens which will never be broken." The establishment of the overland mail is not only one of the great triumphs of the age, but it is an element of civilization which none appreciates but the frontiersman.

The ores of copper found in Arizona and Sonora, are usually the sulphurets, principally grey. The ores of silver are auriferous galena, native silver, auriferous sulphuret of silver, black sulphuret of silver, sulphate of silver, sulphate of iron combined. The gangue is usually quartz or feldspar. I have before me many notes descriptive of various mineral localities, even to minuteness, but the limits of this address will not permit especial mention of them.

The development of the mineral wealth of Arizona has but just commenced, yet enough has been done to give a brilliant promise for the future. The Sonora Company have expended a large capital in opening and prospecting their rich possessions. The Heintzelman mine—so called after the President of the Company—bids fair to become more famous than any of the great mines of old Mexico. In a late letter it is claimed that the ores thus far smelted, yield the astonishing average of \$950 per ton. I saw this mine in September, of last year. About two hundred tons of the ore had already been extracted, and the yield from one small furnace was about one thousand ounces per week. At a cost of \$30,000 the company have brought from San Francisco, and erected, amalgamating works, from which they expect to obtain \$3,000 per day—a million a year. The Sopori mine, which has only been worked in a small way, promises also a rich yield. I have cut, with a penknife, native silver ore taken from the Sopori.

San Antonio and Patagonia have been already mentioned, as well as the Compadre mines. Many others are known to exist, and their owners are only waiting for the protection of a territorial government to commence work. Others are deterred by want of capital. Several hundred thousand dollars have been already invested in mines in Arizona, and several companies are now forming. It is my profound belief that the most colossal fortunes this country has ever known will be made from the mines of Arizona and Sonora.

The Santa Rita copper mine, near the Mimbres, has already been mentioned, as has the Arizona. On the Colorado, forty miles above the mouth of the Gila, on navigable waters, a copper mine is being efficiently worked. It promises to be inexhaustible, and, from its advantageous position, must be immensely valuable. The ore contains a per centage of gold. Silver has also been found on the Colorado, also gold quartz. On the Gila, copper is abundant. In fact, the Territory of Arizona seems inexhaustible in minerals. Iron, copper, silver, and gold are found in hundreds of localities. A plumbago mine was discovered during the past year.

Quicksilver is the only metal of which no mention has yet been made. I do not know of any in the Territory, though its existence is probable.

Of the great extent of the gold region of Arizona there can be no doubt. The late discovery of placers, or surface diggings, on the Gila, has long been anticipated. Emory, in 1849, expressed his belief in its existence. Many an emigrant, on his way to California, has found "the color." Senator Gwin informs me that he heard of gold on the Gila from emigrants at San Diego in 1849. All the frontiersmen and trappers unite in saying that coarse gold is found in the streams north of the Gila. Marcial, the Apache chief before mentioned, told me the same.

That gold, in quartz veins, exists in many parts of the Territory, we know, not only from ancient record and tradition, but from actual observation and experiment. Almost every silver and copper vein yet opened shows, by close analysis, a trace of gold. In the Sopori mine it has gone as high as three per cent. At the Santa Rita del Cobre, the Mexican miners, after their day's labor is over in the mine, work the placers in the vicinity, making sure but small wages. Tradition tells us that many years since the ores of this mine were so rich in gold as to pay transportation to the city of Mexico on mule-back. A gold placer is believed

to exist near a Papago village, south of Tucson. The evidence of rich gold placers in northern Sonora is indisputable. Work in them has nearly or quite ceased, on account of the Apaches, but the record of their past yield is enormous.

The facts in reference to the present condition of the Gila gold mines in Arizona are simply these: At a point on the Gila river, about twenty miles from its junction with the Colorado, and in a succession of sand hills, gold was discovered in September, 1858. The emigrants who were still on their way stopped, and, the news reaching California, others came in. I visited the Gold mines early in November, and found about one hundred men and several families. A town called Gila city had already been laid out, and temporary houses of brush and adobe were in the course of erection.

The country at this point is not inviting, and there are always, at any gold diggings, men who do not and will not work, and who, if they cannot make a living by gambling, or feeding upon some one else, depreciate the country. Gold digging is the hardest of all work, and very precarious in the richest mines. A man who is earning a comfortable subsistence at home should hesitate long about giving it up for gold hunting. The old discoveries of gold on the Spanish trail from Utah to California in 1850, the later ones in Kansas, at Pike's Peak, and in Arizona, together with the well-known placers of Sonora, establish conclusively the fact of the existence of gold throughout a great belt of the continent, from north to south.

The conclusions to be drawn from the facts I have thus hastily set forth are these: That while Arizona cannot be called an agricultural state, she has a sufficiency of arable land to support a large population; that as a grazing and pastoral region she has unsurpassed advantages; but her great wealth is found in her inexhaustible mineral resources. There can be no doubt that if Arizona to day did not contain a single acre of arable land, her gold and silver, her copper and iron and lead, would some day make her one of the wealthiest of the states of the Union.

Sonora, of which western Arizona once formed a part, is so closely connected in interest with Arizona that a brief mention of her resources and condition is necessary to my subject.

Sonora is bounded on the north by Arizona, on the east by the Sierra Madre range of mountains, which separates it from Sinaloa, on the south by the river Fuerte, and on the west by the Gulf of California and the Colorado river,

which separate it from lower California. Its capital is now Hermosillo, was formerly Ures, and, more anciently, Arizpe. The government of the state is at present an absolute despotism.

The state of Sonora, thus called by its earliest people of whom we have any knowledge, derives its name according to the best authorities, from *Sonot*, an Opata Indian word, which means *Senora*, or *Madam*. The Conquistadores were treated with great hospitality by the Opata Indians while visiting their rancherias or villages. As a mark of friendship, the Indians strove to imitate the Spanish pronunciation *Senora*, instead of using their own word *Sonot*, from which arose the corrupted word Sonora.

Sonora has been divided, by various writers, into upper and lower Sonora—into Pimeria Alta and Pimeria Baja—and still further, into the subdivisions of Arizpe Cieneguilla and Horcasitas in the north, with Hostimuri Alamos and the Pueblos of the Mayo and Yagui in the south. The state formerly included Sinaloa, from which it was separated in 1830. It is said to be a part of the plan of the present Governor, Peschiera, to again unite these states as the basis of a new confederacy.

The people of Sonora are generally docile, and, making allowance for the bad system of government and the great misery in which they are found, are obedient to the constituted authorities—in fact, this remarkable docility amounts to weakness of character, and which ambitious revolutionary chiefs have taken advantage of to forward their own views. At the present date, the whole country is devastated by the Apaches. Daily, from all parts, reports are brought in that the Indians have destroyed ranches, killed the inhabitants, and depopulated whole towns. This has been the case for many years, and, after so much suffering on this account, without a prospect in view for the better, it is not surprising that the Sonoranese has lost his energy of character. He gambles, to divert himself and pass away time, and, without hope for the future, he allows things to take their course—a thorough fatalist. Many become desperate, and take unlawful measures to better their condition. It only requires a skillful hand and good government to make the worthless Sonoranese of the present day a useful member of society. Comparatively few educated men are found in Sonora—a common education, consisting of reading and writing; and I believe that in the whole population it does not exceed five per cent., more particularly in the frontier towns. A leading trait in his character is hospitality, and "let the morrow take care of itself" is a common expression

in their mouths. He will share his last mouthful, and considers it a matter of course for the stranger to take his place at his board.

Sonora, for the most part, is mountainous, watered by several small rivers, abundant in mineral wealth; in fact, is considered to be one of the richest states of Mexico. There is a sufficiency of agricultural land to maintain a large population; but the true richness of Sonora consists in its mines of silver and gold, and the great facilities for raising stock. The mines at present are but little worked, owing to the Apaches and revolutions, but laboring under all these disadvantages she is still able to export annually several millions of dollars in silver bars and gold dust, large quantities of stock to California and the territory of Arizona; also flour to the adjoining state of Sinaloa.

The most famous mines and mining districts are those of Alamos, situated in the district of that name, of Jubiata, near Hermosillo; of San Xavier, San Marcial, St. Teresa de Jesus of Babacanora, at present worked by a French company, the richest mine discovered within the last two years; of Corral Vieja, gold, silver and lead; of La Canensa, silver, copper and lead; of La Guachuca las Planchas de Plata.

On the opposite side of the mountain of Babacanora, at the distance of about a league and a half, is found the Rial del Carmen, celebrated for its great mine of that name, and which has been worked to a great extent. It still yields a good profit to the Gambussino.* Ores are still found which yield from ten to twenty mares to the batta. Ores—native silver, auriferous silver, gangue, quartz.

This mine was worked in the first years of the Spanish conquest of Mexico by Hernando Cortes, and in later years by a company of Spaniards, who found a chart and description of the mine in the archives of Mexico. It is remembered by the oldest inhabitant of Sinoquique that native silver, six inches wide, was cut out of the vein, and melted in the refining furnace without more treatment than a lead bath. This company, owing to the changes which took place in the Mexican territory, stopped work, carrying off with them several trains of mules loaded with silver; the mine then partly filled with water, and the Gambussinos, who have been and are the cause of the destruction of so many good mines, commenced operations, cutting out the upper pillars and supports, and in a short time the mine fell in, leaving treasure to an enormous amount buried

* The Gambussino is a sort of mining filibuster, who works regardless of the future of the mine.

in the ruins; in later days shafts have been sunk on the same lode, worked, and ores rich in silver have been encountered, paying from fifteen to twenty mares the nine cwt. In the rubbish which was thrown out of the old mine, a comfortable subsistence is gained by washing in battas—quantities of grain silver being found which, refined in the furnace, yield from twenty-five to thirty per cent. pure metal. This, and several other mines of Sonora, have been abandoned, not from the ores having failed or depreciated in value, but from the want of energy in the Mexican race. The mines in the hands of the Spaniards yielded enormous profits to the miner; they were men of indomitable enterprise, who employed capital, science, and spared no expense to succeed in their adventures; whereas the Mexican is poor, without energy, and too lazy to trust, or help himself. Formerly "Sonora the rich" was a proverb; now "Sonora the poor" is a stubborn fact—but not from the want of the elements of richness. These once developed, she will once more become Sonora the rich, and may be great.

Gold dust has been found in abundance in the placers of San Francisco la Sienga, las Llanos, Ouisabaquita, St. Perfecto; and Soni is famous for its gold mines, also Cocuspera and Baba Seco; in the district of the Pueblo of Cucurpe, gold is found in abundance; during the rainy season in Baquachi district of Arispe, it is also found in quantities which pay well. In a word, Sonora, considered in a mineral point of view, equals, if not surpasses, the richest country in the known world, and only requires capital, peace, and a liberal government.

The climate is good. The rainy season sets in in June, and lasts till the beginning of September; from this month until March, occasional showers fall. The cold is never severe; the weather being very similar to that in California in the same months. From March until June is considered the dry season. The heats are never oppressive; less so than in California. Two crops are raised from the same land in the year, and which for abundance cannot be surpassed—wheat, maize, beans, peas, &c., being the general grain that is cultivated. Sugar-cane is planted in great quantities in Hermosillo, San Miguel, Ures, Rayon, Oposura, Saguaripe, Huepaca, and the Rio Yaqui. A coarse kind of sugar is made, called panocha, which yields to the cultivator an excellent return for his labor. In all parts of the state most excellent tobacco is raised. Cotton is sown by the Indians in the Rio Yaqui.

The state is divided into nine districts, each being governed by a prefecto, who is appointed

by the governor, and is responsible for the good order of his district. The port of Guaymas, at present is the only port of entry. It is a small, but in the business part, well-built town, containing about six thousand inhabitants. The harbor of Guaymas is the best on the Pacific coast. Four miles long, with an inner and outer bay, it will admit ships of the heaviest tonnage, and the commerce of the world could be transacted at this port. The entrance is protected by a long island, which makes it doubly secure.

The principal rivers of Sonora are the Fuerte, the Yaqui, the Mayo and the Sonora. The Yaqui enters the Gulf of California eighteen miles below Guaymas. It has a dangerous bar, but it is believed to be navigable for light draft steamers to Buena Vista, eighty miles from its mouth. The Sonora river flows through the Arispe valley, and is called the Garden of Sonora. It is almost wholly in the hands of the Apaches. The desolation of the depopulated towns and ranches is melancholy beyond description. The valleys of the Yaqui, Mayo and Fuerte, are the best sugar lands in the world.

Ures is a small city of about seven thousand inhabitants, and is situated about sixty leagues from Guaymas. Hermosillo is the largest city, containing from fourteen to fifteen thousand inhabitants. It is the centre of commerce. It is one hundred and ten miles north of Guaymas. The next in size and importance is the Rial de Alamos, situated on the frontier of Sinaloa; it contains from five to six thousand inhabitants; it is the centre of a large mining district, as its name implies—Rial meaning town or city of mines. Oposura, Saguariipa, Rayon, St. Miguel and Arispe, the ancient capital of Sonora, are large towns, with populations of from four to five thousand each. The entire population of Sonora does not exceed one hundred and thirty-five thousand, comprising Mexicans, (*hente de razou,*) Opatas, Yaquis, Mayos, Taumales and Papagos; this population, instead of increasing, is decreasing—the Apaches, revolutions, and emigrations to California and Arizona, producing this effect; and in a few years, if some change does not take place, Sonora will become depopulated.

Having had considerable practical experience on the plains, four journeys overland across the continent in the past four years, I was desirous of stating a few facts, showing the comparative merits of the different routes for a Pacific railroad. The limits of this address will not permit, and I therefore turn from the subject, with the prediction that the route known as the southern, along the 32d parallel, is the only

one that will be built in this generation. Every exploration has shown it to be, not only the most practicable, but probably the only practicable route. The advocates of this route point to the significant fact that the mail from San Antonio to San Diego has never once failed in eighteen months of operation, winter or summer. The great overland mail makes its best time on the 32d parallel, and that portion of the route denounced as the worst, from El Paso west, has proved itself the best. Thirteen hundred miles by stage in December or January in less than eight days: Is there any other route on the continent where this can be accomplished? Not on the Salt Lake route. It is wholly impracticable. Not on the Albuquerque route, else Lieutenant Beale would not go into winter quarters. On the 32d parallel no winter quarters are necessary. It is useless to attempt to evade this question of climate on so extended a route. In addition, the 32d parallel is by far the most level, and has the most water at all seasons of the year. (See Lieutenant Parke's report.) The first terminus of the Pacific railroad will be Guaymas, on the Gulf of California. From El Paso to Guaymas the distance is only about four hundred miles, at most four hundred and fifty. It will run across the Guzman valley through the Guadalupe or some more southern pass to Arispe, thence to Ures, thence to Hermosillo, thence to Guaymas. It will traverse a rich agricultural and mining country, and can connect with San Francisco and all the Pacific by steamers. A branch from Arizona down the valley of the San Ignacio would give Arizona the outlet she so much desires for her productions. It connects with the Texas road at El Paso, and, notwithstanding all the predictions to the contrary, the Texas road will be built. Should it be deemed desirable to extend at once to the Pacific, a steam ferry across the Gulf of California, and short railroad across lower California, to a roadstead on the Pacific, accomplishes the desired end. If these views were elaborated, they could be supported by an array of evidence not to be overthrown.

In a report made to the viceroy of Spain, during the early settlement of the province of Arizona and Sonora, is found the following words: "A scientific exploration of Sonora, with reference to mineralogy, along with the introduction of families, will lead to a discovery of gold and silver so marvelous, that the result will be such as has never yet been seen in the world." The Spanish race have but touched these treasures. It remains for the American people to make good the prediction.

DEPARTMENT OF STATISTICS.

AMERICAN AGRICULTURE.

(Continued from p. 57.)

The area of our territory, as I have already remarked, is about three millions of square miles. Without proposing to do more than refer to the prominent features of our physical geography, I may remark that the calculations of the Topographical Bureau at Washington, show the existence of an interior valley drained by the waters of the Mississippi and its tributaries, nearly as large as the Atlantic and Pacific slopes together, and one-third larger than the whole domain of the Republic on the adoption of the Constitution.

The following table shows the area of each slope, and its ratio to the total area of the United States:

Territory.	Area in Square Miles.	Ratio of Slope to total Area of the U. S.
Pacific Slope	786,002	26.09
Atlantic Slope, proper	514,416	17.52
Northern Lake Region	112,649	3.83
Gulf Region	325,537	11.09
Mississippi Valley, drained by the Mississippi and its tributaries	1,217,562	41.47
Total	2,956,166	100.00

Thus, over two-fifths of the national territory is drained by the Mississippi and its tributaries, and more than one-half is embraced in what may be called its middle region. One-fourth of its total area belongs to the Pacific, one-sixth to the Atlantic proper, one twenty-sixth to the Lakes, one-ninth to the Gulf—or one-third to the Atlantic, including the Lakes and Gulf.

As connected with the facility of water transportation, it may be interesting to add, that a calculation made at the office of the Coast Survey for 1853, gives for the total main shore line of the United States, exclusive of sounds, islands, &c., 12,609 statute miles, of which 54 per cent. belongs to the Atlantic coast, 18 to the Pacific, and 28 to the Gulf coast; and that if all these be followed, and the rivers entered to the head of tide-water, the total line will be swelled to 33,069 miles.

The general character of the soil between

the Mississippi river and the Atlantic is that of great fertility, as also that on the western side of the Mississippi, as far as the 98th meridian, including the States of Texas, Louisiana, Arkansas, Missouri, Iowa, and Minnesota, and portions of Kansas and Nebraska; but from that meridian westward to the Rocky Mountains, and thence nearly to the Pacific, excepting the rich and narrow belt already alluded to along the ocean, is found in some parts a waste utterly barren, and generally the land is unfit for the support of an ordinary civilized community. Of the entire area of the United States, only about one-thirteenth part is improved; about one-eighth more is occupied but not improved. The entire number of acres occupied is 293,560,614, or nearly one-sixth part of the national domain.

The olden theory in regard to the soil first occupied by settlers, broached by Ricardo and Malthus, and for a long time adopted without question, was that the best lands were first occupied by the pioneers of civilization; but this has been refuted by Mr. Carey, whose careful array of facts gathered from the history of various nations, including our own, seems to show conclusively that the richest lands are the last to be cultivated, and hence we may conclude that among the unoccupied portions of our country, there remains soil of greater fertility and ultimate value, than is to be found in the thirteenth portion now under actual cultivation.

The States and Territories among which these lands are divided, are forty in number, besides the District of Columbia, including within their organization 1,620 county divisions.

The total number of farms and plantations in 1850 was 1,449,075; the number of improved acres 113,032,614, and of unimproved 180,528,000; the farms average 203 acres, and in value \$2,258. The implements and machinery on each farm average in value \$105. The proportion of improved land in the different sections of the country is as follows:

In New England, 26 acres in 100.

In the South, 16 " "

In the North-West, 12 " "

In the South-West, 5 " "

In the South, the number of acres to the farm is the largest, but the value is greatest in the Middle States. The average value of the Union is \$11 04 per acre, ranging from \$1 41 in Texas, a fraction more in California, and \$5 34 in the Southern States, to \$11 39 in the North-Western States, \$20 27 in New England, and \$28 07 in the Middle States.

These farms, with occasional exceptions, as

among the ancient manors of New York, of late conspicuous for anti-rentism, are owned in fee by the cultivators, and this rule constitutes an essential element of difference in comparing American agriculture with that of England, where the cultivators are nearly uniformly tenants, generally under terms of longer or shorter continuance, and sometimes at will, causing a separation and occasional clashing of those interests of the landlord and the farmer which are with us united in the same person.

What influence this difference may exert upon the character and progress of agricultural improvements, and how far the superior wealth, and to some extent, more liberal education of English landlords, is counterbalanced by the individual energy and enterprise fostered in America, by an undivided interest, are interesting questions that will be probably elucidated by a comparison of future returns.

The census of 1840 did not ascertain the number of acres of improved land in the United States, so that there are no data showing the increase during the last decade. The report of the Secretary of State for 1856, gives the following statement for the year 1850.

	Acres.	Crops.	Value.
Indian Corn.....	31,000,000	592,071,104 bush.	\$296,035,532
Pasture Lands.....	20,000,000		
Hay.....	13,828,242	138,392,430	
Wheat.....	11,000,000	100,483,544 bush.	\$0,431,260
Oats.....	7,000,000	140,854,179 "	\$1,304,463
Cotton.....	5,000,000	97,537,200 lbs.	75,265,376
Rye.....	1,200,000	14,188,813 bush.	8,932,169
Peas and Beans.....	1,000,000	9,219,901 "	6,914,925
Irish Potatoes.....	1,000,000	65,797,895 "	26,319,155
Sweet Potatoes.....	750,000	38,268,148 "	19,134,074
Buckwheat.....	600,000	8,986,912 "	6,374,147
Tobacco.....	400,000	199,752,655 lbs.	11,985,159
Sugar.....	400,000	237,133,000 "	9,458,320
Barley.....	300,000	6,167,015 bush.	3,875,261
Rice.....	175,000	213,313,597 lbs.	4,306,270
Hemp.....	110,000	34,871 tons.	4,184,530
Flax.....	100,000	7,809,676 lbs.	624,744
Gardens and Orchards.....	1,000,000		13,003,216
Vineyards.....	250,000		442,498
Other products.....	1,000,000		
Improved, but not in actual cultivation	17,247,614	221,249 gall.	
	113,032,614		

Another table, from the Compendium of the Census, page 176, giving more fully the values of the agricultural products of the United States for 1850, including the annual products of live stock, &c., makes the total for that year thirteen hundred millions, and the total for 1854 was estimated at sixteen hundred millions.

This table shows us that in 1850 the four largest staples of our country, ranking them according to their annual value, were—

Indian Corn.....	\$296,000,000
Hay.....	138,000,000
Wheat.....	90,000,000
Cotton.....	78,000,000

Before proceeding to note some further statistics in regard to Indian corn, or as it is sometimes called, *maize*, let me briefly mention the doubt expressed at a recent meeting of the British Association, whether this grain is strictly a plant of the New World, and allow me to refer to the evidence that proves it, as we think conclusively, to be a native grain.

Stress was laid in the British Association on the fact of its occurrence in the floral decorations of Rome in the time of Raffaele; but it was said in reply that botanists had always regarded it as a plant of the New World, and the evidence on this point adduced by Alfonso De Caudolle in his great work on the geographical distribution of plants, was quite complete; and it was sensibly suggested that if it had been a plant of the Old World they could scarcely have failed to raise it, and that Raffaele's painting it might be accounted for by the interest with which all the products of the New World were then regarded. It is referred to by the most ancient Peruvian historians; it was cultivated by the aborigines in the time of Columbus, and is still found growing in a wild state from our Rocky Mountains to the forests of Paraguay. The venerable Baron Humboldt, whose eminent authority may be regarded as settling the question, says: "It is no longer doubted among botanists that *maize* or Turkish corn is a true American grain, and that the old continent received it from the new."

Indian corn is pre-eminently the great staple of the country, surpassing all others in the area of its cultivation, and in the amount and value of the crop, yielding in 1850, within a fraction of three hundred millions of dollars, being all but equal to the united values of the three next staples in their order, wheat, hay and cotton; and as Indian corn is not only the most important, but the most universal crop, extending from the northern to the southern limit of the

United States; its cultivation would seem to afford a better test than that offered by any other of the progress of American tillage.

In the production of Indian corn no state has retrograded. The crop in 1840 was nearly four hundred millions of bushels; in 1850 it was within a fraction of six hundred millions, being a gain of 56 per cent., while the increase of the population, during the same time, was only 35 per cent. The estimated crop for 1855, according to the Secretary of the Treasury, was between seven and eight hundred millions, or nearly double the crop for 1840, and the crop for 1856 was estimated at fully eight hundred millions of bushels.

One of our distinguished agriculturists, Prof. Mapes, in an interesting lecture on Indian corn before the American Institute, has remarked that it may be said of our corn crop, as Mr. Webster said of the turnip crop of England, that its failure for three successive years would nearly bankrupt the nation.

It is with us a staple food of men and of animals. To it we are indebted in part for our beef, and in a very large proportion for our pork. In the far West it is fed largely to cattle and pigs for the more convenient exportation of the produce of the country. The number of hogs fattened on it nearly equals the number of inhabitants, and their lard has become a staple article of export. The sugar estates in the West Indies are reported to be mainly supported by American Indian meal, and its use is extending in Ireland, England, and throughout the world. In 1850, somewhat more than eleven millions of bushels were consumed in the manufacture of malt and spirituous liquors.

While the value of the corn crop has increased so rapidly, the wheat crop, from 1840 to 1850, according to the census, had increased only 15 per cent. It was suggested in the report of the Patent Office for 1852 and '53, that this crop would have shown an equal advance with that of Indian corn, had it not been badly damaged, especially in the North-Western States, before the harvest from which the census was taken; but the statistics of subsequent harvests in particular States seem to render this supposition improbable.

The breadth of land in the United States, suited to the wheat crop, is comparatively small, and in the older States would appear to be diminishing.

In New England the culture of wheat is rapidly declining; in the Middle States it is nearly stationary, the increase for the ten years previous to 1850 being only about fifteen per cent.

In the North-Western States its culture has rapidly increased; and it is from this district that the largest supplies for export are derived.

Chicago, which, twenty years ago, imported flour and meal for her own consumption, has established brands of flour, which are now recognised throughout Europe; and she is shown by recent statistics to be the largest primary grain depot in the world, rivaling Odessa and Galatz, Dantzic and St. Petersburg, while she leads all other ports of the world also in the quantity and quality of her exports.

The population of Chicago, which, in 1850, was 29,000, in 1856 had increased to 104,000.

The census of New York for 1855 shows that her wheat crop, once so famous, is actually decreasing, owing, as is supposed, in part to the ravages of insects, and in part to diseases of the plant, assisted, perhaps, by a gradual deterioration of the soil.

The wheat crop in New York was 12,286,418 in 1840, and only 9,092,402 in 1855, a decrease of twenty-five per cent., while the crop of Indian corn, in the same State, increased during the same period from 10,972,286 to 19,299,691, or nearly 100 per cent., showing, when taken together, not a diminution in the bread crop of the State, for the joint increase is five millions of bushels, but simply a partial substitution of Indian corn for wheat.

In no country can a bread crop be raised with less labor than Indian corn generally throughout the United States, and it is estimated that the same amount of toil of a man and horse which will raise a bushel of wheat in England will raise ten bushels of corn on favorable soil in this country.

The Patent Office Report for 1855, in an interesting paper, by Mr. D. J. Browne, shows that a comparison of the nutritious values of corn and wheat, ranging at from two to three times the price of a bushel of corn, gives a decided preference to the corn; and this fact has, doubtless, had its influence in extending its consumption among our people.

But as yet neither this fact nor the other excellencies of corn meal are appreciated in Europe; and the exports of this grain are very much less than those of wheat. In 1854 the proportions were \$40,000,000 worth of wheat to \$7,000,000 worth of corn. Experiments in the preparation of corn are being made by the Government of Prussia, and elsewhere in Europe, which will probably result in its more rapid introduction as a staple article of food.

Looking at the aggregate exports of the country for the past year, 1857, to learn the

proportion due to the culture of the soil, we find them to be as follows:

The Sea	\$3,739,644	Cotton	\$131,575,859
" Forest	14,699,711	Raw produce ..	3,421,447
Agriculture	75,069,634	Manufactures ..	30,139,646
Tobacco	20,260,772	Specie & bull'n	60,078,352

Total value of exports \$338,985,065
of which there was due to the culture of the soil (agriculture, tobacco and cotton) \$229,661,832, or more than two-thirds of the sum total.

Comparing this amount with the exports due to the culture of the soil in 1847, we find that they were in that year \$131,000,000, the increase for the ten years being more than 70 per cent.

The exports of breadstuffs for the last 15 years have singularly fluctuated, and, although their large increase from \$27,701,121, in 1846, to \$68,701,921, in 1847, and their fall again, in 1848, to \$37,472,751, may be accounted for by the Irish famine of 1847, arising from the potato rot and short crops generally; it seems less easy to account for the differences in the exports of the last five years. They were in

1852	\$25,857,027
1853	32,985,322
Rising, in 1854, to	65,941,323
Sinking, in 1855, to	38,895,348
And rising, in 1856, to	77,187,301

They must be owing, however, to fluctuations in the home supply, as well as in the foreign demand, affected as the latter has recently been by European and Eastern wars, and the consequent suspension of trade with the Baltic, as the average export price of flour from the country, as ascertained by the Treasury Department for the years in question, throws little light upon it.

That price was as follows:

1852	\$4 24
1853	5 60
1854	7 88
1855	10 10

A statement showing the actual average export price of flour at New York from the year 1800 has been published by the Department.

It is desirable that the causes of such fluctuations should be ascertained as nearly as possible, for, while unexplained, they are calculated to excite doubts in regard to the certainty of agricultural profits, and the element of uncertainty, wherever found, is calculated to discourage and to deter.

Passing, from the great staples of wheat and Indian corn to the other agricultural products

of the country, a comparison of the census of 1840 with that of 1850 gives us these general results.

And, first, as regards Stock:

The number of horses, asses and mules, had increased in number something more than half a million, the total in 1850 being 4,896,650. The number of horses had not increased as rapidly as other stock, in consequence of the extension of railroads lessening their demand for the purposes of travel; but, in the newly-settled States, where railroads were but commencing, the increase of horses had kept pace with the population. There is about one horse to every five persons in the United States. The 500,000 asses and mules returned are almost confined to the Southern States, where the climate is regarded as better adapted to this animal than the horse.

The neat cattle had increased nearly three and a half millions, and numbered 18,378,907, of which 6,385,094 were milch cows, 1,700,744 working oxen, and 10,293,069 other cattle.

The rate of increase of neat cattle for the ten years was about twenty per cent. The amount of butter produced in 1850 was 313,266,962, and of cheese 105,535,219 pounds. The average value of the exports of these two articles, from 1845 to 1850, was about one million and a half of dollars.

Swine had increased four millions, numbering in 1850, 30,354,213.

Sheep had increased two and a half millions, and numbered 21,723,220.

In New England there was a remarkable decrease in their number, from 3,811,307, in 1840, to 2,164,452, in 1850, a decrease of 45 per cent. In the five Atlantic or Middle States, New York, New Jersey, Pennsylvania, Delaware, and Maryland, taken together, there was a decrease of 22 per cent. The augmentation has chiefly been in the States south of Maryland, and west of New York.

The returns of wool were as follows:

1840	35,802,114 pounds.	\$11,345,318
1850	52,516,959 "	15,755,088
1855	61,560,379 "	23,392,944

an increase of about 46 per cent. The average weight of the fleece yielded by each sheep was, in 1840, 1.84 pound, and in 1850, 2.43, indicating a great improvement in the breed. This improvement is chiefly shown in the returns relative to Vermont, Massachusetts and New York.

The total value of live stock in the United States in 1855 was \$544,189,516, and the value of animals slaughtered, \$111,703,142.

The grain, root and other crops, from 1840 to 1850:

Rye had decreased from 18,645,567 bushels to 14,188,813.

Oats had increased from 123,071,341 bushels to 146,584,179.

Potatoes (Irish and sweet) had decreased from 108,298,060 bushels to 104,066,044.

Hay had increased from 10,248,108 tons to 13,838,642.

Hops from 1,238,502 pounds to 3,497,029 in 1850, and, as estimated by the Secretary of the Treasury, to 4,820,752 in 1855, indicating a rapid increase in the consumption of Lager-beer.

Cotton had increased from 799,479,275 pounds in 1840 to 978,317,200 in 1850, and to 1,089,409,908 in 1855.

Rice from 80,841,422 to 215,313,497, while Tobacco has decreased from 219,163,119 pounds to 199,752,655.

Wool had increased from 35,802,114 pounds to 52,516,959.

Silk Cocoons had decreased from 61,652 pounds to 10,843.

Wine had increased from 124,734 gallons to 221,249.

From a table of the actual crops per acre in the different States, it would seem that there is a diversity so great as to confirm the doubts in regard to its correctness frankly intimated by the compiler, who states that nothing better can be framed from the returns, which, in general, were very carelessly made, or entirely neglected.

In Wheat we find the average number of bushels to the acre to be 5 in Alabama and Georgia, 7 in North Carolina, Virginia and Tennessee, ranging upwards in the other States until it reaches 12 in New York, Ohio and Indiana, 13 in Maryland and Vermont, 14 in Iowa and Wisconsin, 15 in Florida, Pennsylvania and Texas, and 16, the highest average, in Massachusetts, being three times the average of the lowest.

In Rye we find the average of bushels to the acre to be 5 in Virginia, 7 in Georgia and Tennessee, 8 in New Jersey, 17 in New York, and 25 in Ohio, or five times the lowest average.

In Indian Corn we find the lowest average to be 11 bushels to the acre in South Carolina, 15 in Alabama, 16 in Georgia and Louisiana, 17 in North Carolina, 18 in Mississippi and Virginia, and so rising upwards until it reaches 27 in New York and Maine, 32 in Vermont and Iowa, 33 in Indiana, Illinois and New Jersey, 34 in Missouri, 36 in Ohio, and 40 in Connecticut, some three and a half times the lowest average.

In Oats we find the lowest average, 10 bushels to the acre in North Carolina, 12 in Mississippi, South Carolina and Alabama, 13 in Virginia, 18 in Arkansas, Georgia and Kentucky, 20 in Delaware, Indiana and Maine, 21 in Connecticut, Maryland and Ohio, 22 in Pennsylvania, 25 in New York, 26 in Vermont, New Jersey, Missouri, Michigan and Massachusetts, 29 in Illinois, 35 in Wisconsin, and 36 in Iowa.

Of Rice we have returns only from three States, Louisiana giving 1,400 pounds to the acre, South Carolina 1,750, and Florida 1,850 pounds.

Sweet Potatoes vary in quantity from 65 bushels to the acre in Texas to 175 in Louisiana, 200 in Alabama, and 400 in Georgia.

Irish Potatoes yield 65 bushels to the acre in North Carolina, 75 in Maryland, New Jersey, Ohio and Pennsylvania, 100 in Indiana, Iowa, New York and Rhode Island, 120 in Maine and Tennessee, 125 in Georgia and Wisconsin, 130 in Kentucky, 140 in Michigan, 170 in Massachusetts, 175 in Florida, 178 in Vermont, 230 in New Hampshire, 250 in Texas.

In this table particularly it is difficult to account, except on the supposition of error, for so large a difference in the average yield per acre between States so alike in character as Alabama (60) and Georgia (125), or between Connecticut (85), Vermont (178) and New Hampshire (230).

No question, perhaps, connected with American Agriculture is of more general interest and importance than the measure of profit which may reasonably be expected from capital invested in farms, and managed with that degree of skill and industry, which are the recognised requisites to success, in the various branches of commerce and of manufactures, in the trades and learned professions.

It has been truly remarked, that "mankind have a habit of graduating the rank of labor by the recompense it receives;" and it is undoubtedly the conviction that agricultural labor is less profitable than many other employments pursued in cities and large towns, that induces so many thousands of our ambitious and energetic youths, especially in New England and the Atlantic States, to forsake their rural homes, and the half-cultivated farms of their fathers, in the hope of more rapidly achieving independence, and perhaps fortune, in communities where every branch of trade is already over-crowded with anxious competitors.

The same idea is not unfrequently entertained by capitalists. The common belief seems to be, and it is, doubtless, founded upon common experience, that the profits of farming op

erations are very moderate, and that it is idle to expect more than a small per centage from capital thus invested. A contrary belief is usually attributed to an undue enthusiasm with no basis of fact, and occasional instances of large profits are regarded as extraordinary exceptions, that are to be attributed to local and special causes, and are not, therefore, to be allowed any weight in the support of a general theory.

It is most desirable that accurate statistics in regard to the fair profits of capital invested in agriculture, after just allowance for the industry required for its development, should be gathered from all sections of the country, and it would be well if some inquiries to this end were embodied in the Agricultural schedules for the approaching census.

The fact is as yet but imperfectly appreciated among us, that Agriculture, which, in its origin, was but an art, has been gradually raised to the dignity of a science; and now, thanks to the discoveries of the great practical and analytic chemists, in Europe and America, of whom Liebig is the chief, stimulated and aided by the mechanical invention, for which our age and country are so remarkable, it occupies a position of pre-eminence unknown during the last century.

"There is, I believe," says Mr. Everett, "no exaggeration in stating that as great an amount and variety of scientific, physical and mechanical knowledge is required for the most successful conduct of the various operations of husbandry, as for any of the arts, trades, or professions."

Assuming this position to be correct, it is clear that no amount of evidence in regard to the profits of farms conducted by men wanting in this wide range of scientific, physical and mechanical knowledge, can determine the profits that may be reasonably expected from farms of the like capability, where that varied knowledge institutes and guides every operation.

But there is reason to believe, that while the limit of Agricultural profits generally throughout the country is as much below the line it is capable of reaching, as the present standard of Agricultural education is below that high standard to which Mr. Everett directs the ambition of the American farmer, there are good grounds for the opinion, that, with the increase of an Agricultural literature, the diffusion of books and newspapers, of farmers' clubs, of State, county and town, Agricultural societies, of national and local fairs and exhibitions, there is a perceptible and rapid improvement in the rural economy of the country, in the intelligent

culture of the soil, and in the profits of Agricultural capital.

So long ago as 1795 Mr. Burke placed the profits of a proprietor of 1,200 acres at 12 per cent. Sir John Sinclair, a quarter of a century later, declared the proper profits at 10 to 15 per cent. M. Rives, of Virginia, by whom these facts were mentioned in a very interesting Agricultural address, stated the profit of the model farm of Gignon, near Versailles, at 14 per cent. The "*Revue des deux Mondes*" for February 15th, 1858, in an article entitled, "Les Questions Agricoles en 1848," mentions that the net profits of the farm at Bresles, in the department of the Oise, rose, in 1856, to 246,000 francs upon a capital of 800,000, being more than 30 per cent.

Occasional accounts in our Agricultural papers indicate a rate of interest, which, if verified as one that could be reasonably anticipated with a due share of skill and industry, would immediately induce the investment of millions of capital in Agricultural operations, to the benefit of the country at large, as well as to the individuals making the advances.

One point that should not be lost sight of in a consideration of the advantages attendant upon Agricultural operations is the safety of the capital invested, compared with the chances of loss attendant upon commercial and manufacturing investments. The Hon. Emory Washburne, of Massachusetts, in an address before the Worcester Agricultural Society, in 1854, stated some facts bearing upon the question, which a statistical inquiry, if one could be accurately made, into the successes or reverses of the various pursuits in which our countrymen engage, might probably multiply to an extent, that, without proof, would hardly be credited. Of the merchants in Boston doing business at a certain wharf during forty years, only six became independent, the remainder failed or died destitute of property. Of one thousand merchants, having accounts at a principal Boston bank during the same years, only six had become independent.

Another investigation led to the startling result, that of every hundred traders, but seven succeed in acquiring wealth. From such reverses the farmer is comparatively free. Of eleven hundred and twelve bankrupts who took the benefit of the bankrupt law in Massachusetts, only fourteen were farmers; and of twenty-five hundred and fifty bankrupts in New York only forty-six were farmers. Less than two per cent. of the bankrupts belonged to the Agricultural population, although that population so largely exceeds all the rest of the people however classified.

At the present moment, when the leading manufacturing interests of the country are in a languishing condition from their recent reverses, and the conviction is generally felt of the precariousness of their profits for the future, dependent as those profits are upon the varying policy of opposing parties; the claims of Agriculture upon the attention of capitalists, as well as statesmen, are likely to be more fairly scrutinised than when commerce and manufactures were in the full tide of success. Should the schedule for the approaching census include the question of Agricultural profit in such a form that the returns may afford reliable data for prudent calculations, the next decade may perhaps see an investment of capital from the Atlantic States, in the cultivation of wheat and corn in our western valleys, to an extent that shall materially swell our exports of breadstuffs, and constitute them the chief element in our foreign exchanges.

Much has been said of late years of a gradual deterioration of the soil in the older States, as evinced in part by the decreasing ratio of crops to the acre, as compared with the ratio in former years, and with the usual ratio in other countries.

Mr. Morrill, M. C., of Vermont, by whom a bill has been introduced into the House of Representatives designed to grant to the several States some ten millions of acres to be divided amongst them in proportion to the number of senators and representatives they send to Washington, with the view of promoting Agricultural education and Agricultural science, by the establishment of an Agricultural college in each State, has made some startling statements upon this subject. He affirms that Agriculture is rapidly declining in every State of the Union, that the quantity of food produced bears each year a smaller proportion to the number of acres under cultivation, and that over a very wide area some of the most useful crops bid fair to become extinct.

A writer in the "Year Book of Agriculture for 1855," on the "Alarming Deterioration of the Soil," referred to various statistics of great significance in connection with this subject. Some of them regarded Massachusetts, where the hay crop declined 12 per cent. from 1840 to 1850, notwithstanding the addition of 90,000 acres to its mowing lands, and the grain crop absolutely depreciated 6,000 bushels, although the tillage lands had been increased by the addition of 60,000 acres.

In Indiana the river bottoms which used to produce an average crop of sixty bushels of corn

to the acre, now produce but forty. In Wisconsin, which is younger still, it is estimated that only one-half the bushels of wheat are now raised to the acre that were raised twelve years ago; and the writer declares as the conclusion of the whole matter, "that the soils of New England, after all the admonitions we have received, are annually growing poorer, and that *even the virgin lands of the great West* are rapidly becoming exhausted by their fertility."

He refers to the large falling off of the wheat and potato crops in New England, which have however been replaced by Indian corn, and also to the falling off of wheat in Tennessee, Kentucky, Georgia, and Alabama, to the extent of 60 per cent. from 1840 to 1850, and assumes that the agricultural statistics of each State tell the same sad story.

As regards a falling off in the production of the country, I think it is clear from a comparison, not of wheat and potatoes alone, but of the total products of the soil, especially of Indian corn, in 1840, with that of the same crops in 1850, that Mr. Morrill is mistaken; but as productiveness of crops and destructiveness of soil are said to be the two most prominent features of American agriculture, the largest harvests in our young States ought not to blind us to the fact that the fertility of those parts of the older States which once yielded as abundantly, seems to have been steadily diminishing for a long course of years.

This fact is exhibited, not only in the wheat lands of New England, and other parts of the North, but on the tobacco fields of Virginia, and the cotton plantations of the South; and the subject undoubtedly deserves the most careful investigation.

The deterioration of our soil is doubtless owing, in a great part, to a careless system of cultivation, common to new countries where land is cheap and labor is dear, and the soil is naturally productive, and the individual cultivator is intent upon large immediate returns, thoughtless of the permanent fertility of his farm, careless of the interests of his successors, and regardless of the prosperity of the community at large. It has been suggested that every agricultural people runs the same race of exhausting culture, shallow plowing, a continuous course of impoverishing, with neither rest, rotation, nor sufficient manure; and that necessity alone can convince them that duty and interest both demand, that land shall be so tilled as to increase rather than diminish in fruitfulness. Such a necessity, in the lessening crops of the Atlantic States, and westward emigration in search of more fertile territories,

already presents itself to the intelligent American agriculturist: and the reasonable belief that the same exhaustive system will soon begin to tell upon the most productive regions of the West, has led to the discussion in agricultural newspapers, and at farmer's clubs, of the philosophical causes of the exhaustion, and the best means of renovation.

In some sections of the country, efforts to restore exhausted lands have been attended with the most marked pecuniary success. Mr. Ruffin, of Virginia, estimates the increased value of reclaimed lands in Eastern Virginia, by marling and liming, from 1838 to 1850, at some thirty millions of dollars. In the well known case of a success from claying a light soil by the celebrated Coke of Norfolk, afterwards Earl Leicester, that gentleman doubled the value of his estates in Norfolkshire; and among numerous instances of immense improvement simply from drainage and deep plowing, with but little aid from fertilizers, may be mentioned one cited by Prof. Johnston, of the Home farm at Yestee, belonging to the Marquis of Tweeddale, where the land, by these means, was raised in value eight times—from 5 shilling to 40 shillings rent per acre.

There are no reliable data from which we can now gather the progress of deterioration in productive lands in the United States, or the reclamation of exhausted lands; but the rapid increase in the use of *guano*, the most powerful of restoratives, indicates to some extent the increasing attention paid to fertilizing.

The consumption of *guano* for 1854, as stated by Prof. Mapes, was about 140,000 tons. The amount sold in England, during the year 1855, was stated by Mr. Nesbitt at 210,000 tons, being an increase of twenty per cent. on the consumption of 1854, which was also an increase of twenty per cent. over that of 1853; this increase has taken place in the face of a rise in the price, from forty-five to about eighty dollars per ton.

It would seem proper that the schedules for the new census, should embrace inquiries in regard to the deterioration or improvement of the soil, which may be shown, not only by the ratio of crops to the acre at successive periods, but by the market value of the same lands at stated intervals; and that the schedules should also exhibit generally the quantity and prices of the various fertilizers in use—barn-yard manure firstly and chiefly, then *guano*, *poudrette*, lime, gypsum, marl, muck, and so forth, that are yearly devoted to the enrichment of our soils. Upon this item of manure, insignificant as it might seem to the unreflecting mind, de-

pends the continuous prosperity of our country. This is the secret of England's agricultural wealth. Mr. Webster, in his sketch of English agriculture, quoted the extraordinary fact stated by M^rQueen, "that the value of the animal manure annually applied to the crops in England, at current prices, surpasses in value the whole amount of its foreign commerce," and he added, "there is no doubt that it greatly exceeds it."

The schedules might also advantageously give us, not simply the amount of new lands brought into cultivation, but of the worthless lands that have been reclaimed by drainage.

In almost all the States extensive tracts of swamp lands are found, not only unfit for cultivation, but frequently inducive of that fearful scourge of health and happiness, fever and ague, that year after year prostrates the energies, and shortens the lives of tens of thousands of our countrymen.

Large grants of these swamp lands have been gratuitously made by the Federal Government to the States, in the hope of their reclamation through measures to be adopted by the State Government. Since 1849 nearly sixty millions of acres have been thus granted. In the drainage of large tracts of land we have the benefit of the experience of Europe, especially of Holland, where the Harlem Lake, thirty-three miles in circumference, and thirteen feet deep below the tide, has, since 1839, been converted into a most fertile tract, occupied by some two thousand inhabitants, and exhibiting fields of verdure dotted with numerous cottages, and enlivened by cattle, horses and sheep, grazing on the fruitful meadows. The lands thus reclaimed from the ocean are of extraordinary fertility, and are estimated as capable of supporting seventy thousand persons.

Of the pecuniary results of drainage in this country, Gov. Wright, of Indiana, quoted an example in a public address, touching the marshy lands of that State, embracing three thousand acres. He mentioned a farm of 160 acres which had been sold at five hundred dollars, and, after an expenditure of two hundred dollars in drainage, was worth upwards of three thousand dollars, or an advance of more than 500 per cent.

But, apart from these large tracts of overflowed lands, scarcely a farm in the country but would be improved by thorough drainage, and it would not be difficult to ascertain the number of acres under-drained in each year of the census, nor the estimated additional value which they thereby received.

Looking at the acreage now devoted to In-

dian corn, to say nothing of our other crops, it has been estimated that by the adoption of an improved system of agriculture, embracing drainage, deep ploughing and skillful manuring, the entire crop now yielding 400 millions of dollars, might, upon the same breadth of land, be trebled if not quadrupled. At present, with occasional exceptions, our average crops per acre are even less in our most fertile and almost virgin States than in the soil of Europe, that has been cultivated for centuries.

Take wheat, for instance. The average crop per acre in New York, Ohio and Indiana, is 12 bushels; in France it is 13; in England, 21; in Flanders, 23; in Scotland, 30 (on the authority of Professor Johnston); and in New Brunswick, 19.

How the average might be increased throughout this country by careful culture, we may, in part, learn from the returns of occasional crops in England of seventy bushels, in New York of sixty, on the prairies of forty-four, and at San Jose, as is reported, of eighty-seven.

Yet another topic closely connected with the interests of American agriculture is the recent diminution of the proportion of the male population engaged in agricultural pursuits, as compared with the number engaged in commercial and other pursuits. The precise ratio of that diminution cannot be ascertained from the census, for the reason that the tables of 1850, on the leading occupations of the people, were based upon the whole number of male inhabitants over fifteen years of age, including all the free males, and three-fifths of the male slaves; whereas the former tables of occupation, made in 1840 and 1830, were based upon the entire population. The census of 1840 made the portion engaged in agriculture 77.4 per cent. for both sexes, that of 1850 only 44.69.

There is, therefore, reason for believing that the proportion of the population devoted to agricultural pursuits is decreasing; and it is important that the schedules of the next census should be drawn with reference to the determination of this point with entire accuracy, and should develop whatever facts may be essential, to enable us to discover, and if possible to correct, the causes that may be diverting an undue proportion of American industry from the culture of the soil.

The attractiveness of town and city life for the laboring classes may be lessened by a study of the tables of mortality, showing that the average duration of life is much larger in the rural districts.

In England the average duration of life is

forty-five years in Surrey, but only twenty-five in Manchester and Liverpool.

A paper, by Mr. Edward Jarvis, on vital statistics at Dorchester, in Massachusetts, read before the British Association in January, 1840, showed that, out of 1,700 persons,

The average life of farmers was 45 years.

" " merchants 33 "

" " mechanics 29 "

" " laborers 27 "

Looking from the average years of life to the increase of the male population, we find it stated that in Massachusetts, among the cities and towns, it is 6 per cent., while among the agricultural population it is 9 per cent., a difference of male births in favor of the rural districts of 33½ per cent.

These facts, if verified by the national statistics, and brought home to the consciousness of the people, are certainly calculated to restrain a preference for the crowded streets and impure atmosphere of our cities, over the broad fields and bracing air of the country; and the feverish anxiety for rapid gains in mercantile pursuits, may be advantageously checked by statistics showing the uncertain gains of commercial speculations, and the certain profit of enlightened agricultural toil.

The leading facts at which we have glanced, of an increasing foreign demand for breadstuffs, the limited breadth of our arable land, which thousands of our citizens have been taught to regard as inexhaustible, the gradual deterioration of the soil from a wasteful system by which the constituents of fertility are removed with each successive crop, without being restored by appropriate manures—a system based upon the desire for immediate gains, without thought of the sacred duty that devolves upon us to transmit the soil to our posterity, with undiminished productiveness, that it may sustain in comfort and happiness the unnumbered millions that are presently to occupy our land; these and similar considerations connected with the present and future prosperity of our country, appealing at once to the interest and the patriotism of the nation, may be so elaborated and diversified, and verified by the tables of the census, that its returns shall teach us not simply lessons in political economy, but lessons of daily duty, the benefits of which shall be reaped alike by the present and future generations.

There are various topics connected with American agriculture, on which I would like to touch, did time permit me. One, the recent and rapid introduction of improved agricultural machinery, soon, probably, to be followed by

the use of steam ploughs and other machinery worked by the same motor, overcoming, to a great extent, the chief difficulty of the American farmer in the high price of labor; that feature of our agriculture which constitutes so marked and essential a difference between the practical agriculture of America and Europe.

Another is the spread of agricultural science, through the efforts of the patent office distributing their reports and seeds gathered from Europe; through the multiplication of books and papers devoted to the subject, and by county, state and national societies and farmers' clubs, in their frequent meetings, addresses, and exhibitions of agricultural implements and products.

What the country now most requires in reference to its agriculture, is, that its condition should be faithfully photographed in the returns to each federal census, and it will be for the agricultural section of this body to prepare well-considered suggestions for the new schedule, and submit them to the Federal Government. Such suggestions will appropriately come from the American Geographical and Statistical Society, in view of its national character and the scope of its labors; and such suggestions, judging from the past, the Federal Government will cheerfully receive and carefully consider.

Among the additional items which might advantageously be included in the schedules, I would suggest the following:

As regards persons employed in farming.—The proportion of the population thus employed of both sexes. Their average life, as compared with that of persons living in towns, and of other trades.

As regards capital employed in agriculture.—Not only the proportion invested in land, stock and implements, but the profit thereon received during the year immediately preceding the census.

As regards the farms.—Not only the improved and unimproved lands, and the proportion in meadow, pasture or tillage, but the number of acres of each farm that have been drained; the number requiring draining; the number drained during the last year; the cost of draining, and the value of the land before and after.

In regard to the improvement or deterioration of the soil.—The average of each crop, and cost of each per acre; the average of bushels or tons to the acre, and the cash value of each on the spot.

In regard to manures.—The amount, variety, and cost of those applied during the last year, and the rate of cost per acre.

Other suggestions will, doubtless, be made, a collation of which, by the Bureau of the Census, may afford us, in future years, the means of tracing the progress of American agriculture, and reading its actual condition at each decade, with the same facility with which a prudent merchant reads the past and present of his business in the carefully prepared balance sheet; and if the future of America shall continue to exhibit the same steadily progressive advance that we find in her past, the tabular results of each succeeding census, dry and uninteresting as they may seem to those who shall see in them but columns of figures, will in fact develop the fulfilment of some of those prophecies of the coming wealth and splendor of the Western Continent, that when occasionally uttered by our far-seeing economists, are apt to be regarded as the careless dreams of visionary enthusiasts.

MR. PRESIDENT AND GENTLEMEN, I cannot close this address, without remarking that the increasing application of natural science to rural economy, will closely connect the agricultural with the other sections of your body, and that our agriculture is the national interest which is to be chiefly benefited by their learned researches.

The late Prof. Johnston, of Edinboro', whom I was so happy as to know during his visit to this country, and whose admirable lectures in the United States have connected his name with American, as it was already identified with British agriculture, on one occasion dwelt upon the aid which the art of culture receives from every branch of science, and this association, I trust, destined to verify the correctness of his remarks.

The section on Topography, embracing the physical geography of the continent, and the topography of the several States and Territories in detail, concerns, among much else that is interesting, the extent and character of our arable soil; our mountain elevations and depressions; our table-lands and low lands, and in connection with the section on Hydrology, will exhibit the influence of the ocean and the gulf, of our lakes and rivers, of tides, gulf streams, prevailing winds and storms on the capabilities of the country, and the practices and profits of its cultivators.

The sections of Geology and Meteorology have an equally direct bearing upon agriculture, in explaining the nature of the rocks and of the soil, the fall of rain, the necessity for irrigation and for drainage.

The section on Botany may materially aid the farmer, by teaching him the nature of the

weeds that check his progress; of the rust, smut and mildew which attack his cereals; of the cause, yet to be discovered, of the rot in the potato; of the mutual adaptation of the plants to the soil; of their special habits and natural structure, their increase and decrease in various localities.

The sections of Zoology and Animal Physiology embraces, by your classification, domestic animals and their commercial value, their various breeds, the rearing of stock, and it, perhaps, properly includes the agency of animal life in fertilizing the soil. That on Commerce relates to the transport and exports of bread-stuffs, and their relation to our foreign exchanges; that on Manufactures to our agricultural implements, enlarging our production by diminishing the necessity for human labor; and that on Finance, to our national wealth, of which agriculture is the most prominent feature.

We began, gentlemen, by recognizing in agriculture the largest material interest of our country, constituting the bulk of her wealth, and indicating, in no small degree, the physical comfort, the prosperity, and the civilization of our people.

We next considered its relation to less favored foreign lands, whose children look to us for food:—a relation that invests the quiet labors of our farmers with an interest beyond the seas, not simply in shaping commercial speculation, and regulating among merchants the price of bread, but in gladdening distant homes, in staying the march of famine and starvation, in allaying popular discontent, and even averting national revolutions.

After a survey of the area, the population, the products, and the statistics of our great American farm, of its home resources, its foreign markets, and its probable future, we close with the thought, that for the advancement of this great interest, which supplies millions with healthful and profitable employment, and other millions with their daily bread; canals and railroads intersect our continent, extending westward towards the far Pacific; ships whiten the ocean, and steam labors in a thousand forms. That to supply its workmen with fitting implements, inventive genius is ever wakeful, and mechanical skill unceasingly active. That in their behalf chemistry, by the crucible and analysis, is extorting from nature her hidden secrets; and science, in all her forms, is lending her skillful aid to perfect, in this advanced and advancing age, the art that was born with the creation, in the garden that was given to man to dress and to keep it.

We close with the thought, suggestive of thankfulness and good will, that all these agencies are at work for the benefit of our universal brotherhood, to lighten the primeval curse, and to compel from our common mother, for the benefit of the children of a common father, more varied and abundant harvests, with greater certainty and with lessened toil.

Let us reverently remember, gentlemen, in our study of the laws of Political Economy by the guiding light of Statistics, that the truths which we seek to discover, are a part of that universal law whose seat is the bosom of God, and whose voice the harmony of the world.

Nor let us ever forget, in the contemplation of our unparalleled blessings, that the happiness and prosperity of a nation depends infinitely less on their material wealth, than upon the observance of those great rights and duties which our fathers solemnly recognized when we took our place in the family of nations.

ON THE MANNER OF TAKING A CENSUS.

*To the Committee of Publication
of the Am. Geo. and Stat. Society:*

GENTLEMEN,—I propose herewith to communicate some of the results of my observation upon the difficulties to be encountered in taking a census of the population, and the statistics required by law to be obtained therewith. Having had the principal care of preparing the blanks and instructions, and of answering letters of inquiry, from the marshals appointed for taking the census of the State of New York in 1855, and the entire direction of the labor of preparing the returns of that census for publication, I could not fail of meeting with many of the difficulties that must attend every enterprise of this kind, and in a greater or less degree impair the accuracy of its results.

It is obvious that the preparation of the summaries and abstracts embodying these results, involves no source of error which is not under control; and that, with suitable precautions, and careful checks and revisions, no errors need to arise in this part of the labor. To secure accuracy in this service, it should be performed by competent persons under one general direction, and with uniform instructions for settling the various points of difficulty that are liable to arise. I am convinced that labor saving

methods may to a considerable degree be introduced, to facilitate this branch of the service, and that simple mechanical appliances may be used to advantage to expedite the work.

Our principal care must therefore be, to obtain correct returns from the marshals; and, omitting for the present, any discussion as to what these returns should embrace, I will limit this letter to a statement of what appear to be inherent, and, to some extent, unavoidable difficulties, that will be found attending this all-important duty. There can be no doubt but that the census takers have been overcharged with duties that might better be performed by other persons, and in a different way. There is not an inquiry they are required to make, which is not important in its place, or which is not useful to the legislator, and of value to the statistician and the civil economist. But when we add to the minute inquiries of personal statistics, the registration of births, marriages, and deaths, for the year or the ten years previous—the minute statistics of agriculture and manufactures, in their immense combinations and details—statistics of dwellings—of churches and religious societies—of schools and school-houses—of newspapers and periodicals—and of such new points of inquiry as each succeeding census has had appended to its schedules, it will not be deemed amiss to rank as first on the list of desiderata, a high degree of qualification on the part of those charged with making the enumeration. As these persons are not in all cases selected from any peculiar fitness they are thought to possess, it will sometimes happen that they will fail to appreciate, or neglect to perform some part of their duties, and their returns will show palpable deficiencies in some one or more particulars.

These defects are perhaps due less to the census marshals than to the law; and while I would not abridge, but rather extend, our facilities for obtaining full statistics upon the points last enumerated, I would deem it a subject worthy of grave consideration, whether we might not devise some more direct and appro-

priate method of arriving at these desirable results. In the best European systems, the personal census is made a distinct and independent branch of inquiry, and in our own country it will generally be found that this portion has received the most attention, as if it had been regarded the primary object, while the remaining inquiries had been considered as incidentally, and more or less remotely, connected with it.

As we multiply inquiries upon collateral subjects, we necessarily extend the time required by each enumerator for the performance of his duties, and consequently admit into every department, the errors incident to changes and removals, by which the proper persons cannot be found to answer the questions required. Lapse of time will also impair the memory of many persons, and the precision of the returns will be found invariably to bear an inverse ratio to the interval within which the enumeration is made. The nearer we approach a point of time, the greater will be the chances of success, and not until the census is taken upon one day, can we hope to secure everything desirable in point of accuracy.

Another source of error will be found in the want of a uniform knowledge of their duties by the census marshals, or a misconstruction of the intention of the several columns of the schedules. This error is always more liable to occur in the collateral inquiries, than in those relating to the population. Two persons might, for example, report a very unequal amount of improved and unimproved land in the same district, by one including and the other rejecting from the column of improved land, a natural meadow or marsh, which was partly available for tillage. This liability to error can only be remedied by very minute and carefully prepared instructions, fully indexed and conveniently arranged for reference. In many instances, the persons charged with taking the census might be previously convened, the plan and intentions of the schedules explained by some person thoroughly informed, their principles discussed and questions upon doubtful points answered. I consider this measure fully

applicable to a State census, and should not hesitate to urge its adoption, whenever sufficient numbers of the enumerators could be assembled. A single evening, thus spent in mutual discussion, would do much towards preparing these officers for an intelligent and uniform discharge of their duties, and enable them to *commence* their labors, with a fuller appreciation of the subject than they might, under other circumstances, *end* them. From the short period devoted to obtaining the census, a person has no chance of acquiring that facility for the transaction of the business that grows out of long experience and habitual application, as we constantly see in other pursuits of life;—and from the long interval that occurs between two enumerations, it can scarcely be expected that the experience acquired upon one census will be to any extent available in the next. We must therefore depend upon preliminary instruction, of the kind above alluded to, for anything we have to expect, beyond the ordinary sagacity and intelligence of the officers charged with the duty of collecting these statistics.

It is not probable that the census marshals will generally inform themselves of the varied deductions which may arise from their labors, or even that those who have given the subject the careful study of years, can fully realize the beautiful generalizations that may grow out of these facts, when they shall have accumulated through a long series of years; for when the tables of a census lose their interests as charts of existing society, they become pages of history and landmarks of progress.

Yours, respectfully,

FRANKLIN B. HOUGH.

ALBANY, Feb. 17, 1859.

RAIN-BASINS OF PENNSYLVANIA.

	Basins.	Sq. M.	Sq. M.
Atlantic.	Delaware River	3,895	6,499
	Schuylkill	1,884	
	Brandywine	720	
	Susquehanna River	17,018	20,446
	Juniata	3,428	
Gulf of Mexico.	Potomac River	1,581	1,581
	Ohio River		
	Alleghany	9,546	15,432
	Monongahela	2,800	
	Beaver	3,086	
St. Lawrence.	Lake Erie	352	352
	Lake Ontario (Genesee) ..	90	90
Total		44,400	44,400

STATISTICS OF AMERICAN STATES.

NO. 3.

REPUBLIC OF BUENOS-AYRES.

Lat. 33° 19' to 41° 12' S.	Population (1855.) 303,355.
Long. 56° 13' to 70° 57' W.	Density, 1.03 to sq. mile.
Area, 294,000 sq. miles.	Capital, BUENOS-AYRES.

GOVERNMENT.

Executive.—Governor and Captain-General, elected for three years.

Administration.—1. Minister of the Interior and foreign affairs; 2. Minister of War and Marine; and, 3. Minister of Finance.

Legislature.—A Senate and Chamber of Deputies. Assemblies annually.

Judiciary.—A Supreme Court of Appeals, 3 District Courts, &c.

National Religion.—The Holy Apostolic Roman Catholic. The Church is under the immediate superintendence of the Bishop of Buenos-Ayres.

POPULATION, (1856.)

Northern District	53,344
Western "	66,134
Southern "	82,877

Total rural population	202,355
City of Buenos Ayres	101,000

Total civic and rural population

NATIONAL FORCES.

Army, (on the peace establishment.)—Infantry, cavalry and artillery, 6,370 men.

National Guard.—About 30,000 men.

Navy.—3 steamers, 2 corvettes, and 4 other small vessels.

PUBLIC FINANCE.

Revenue—Receipts (1857)	82,105,211 pesos.
<i>viz.</i> , Import duties	60,487,896
Export duties	9,525,053
Direct taxes ..	2,653,906
Other sources ..	9,438,354
—Expenditures (1857)	79,800,392 pesos.

Public Debt—Interior (bearing interest) ..	18,500,000
Paper in circulation	105,000,000

Total (in paper money) ..	123,500,000
—Foreign	£1,750,000 sterling.
(20 paper=1 silver.)	

LIVE STOCK IN THE STATE, (1856.)

Cattle	4,502,090 head.
Horses	2,196,663
Sheep	7,966,725

COMMERCE.

1.—Value of Exports and Imports, (1855.)

Exports.	Imports.
Great Britain.. \$3,239,453	Great Britain.. \$4,860,000
United States.. 3,244,844	France..... 2,700,000
France..... 2,181,862	N. of Europe... 918,000
Belgium..... 1,810,716	Spain, Gibraltar
Spain..... 1,358,131	and the Med-
Havanna..... 828,385	iterranean... 648,000
Italy..... 987,152	United States.. 1,080,000
Brazil..... 925,060	Brazil, &c..... 1,188,000
Chile..... 293,524	
Hamburg..... 223,707	
Netherlands.. 115,239	
Other countries. 52,913	
Total... \$15,260,986	Total... \$11,394,000

2.—Quantity and Value of Exports, (1855.)

	No.		
Ox and Cow Hides.....	1,198,573	\$7,465,449	
Horse Hides.....	148,740	192,439	
Goat and Sheep Skins ..doz.	161,250	461,683	
Hair.....	33,832	730,771	
Wool.....	225,773	2,302,885	
Grease and oil.....	57,216	305,266	
Tallow.....	122,764	1,522,274	
Salt meats.....	258,860	1,397,844	
Tobacco.....	28,189	422,835	
Ostrich feathers.....lbs.	129,599	41,471	

3.—Exports of Hides for 7 Years.

Years.	Ox and Cow Hides.	Horse Hides.
1849.....	2,961,342	238,514
1850.....	2,424,251	187,107
1851.....	2,601,318	140,677
1852.....	1,994,196	106,047
1853.....	1,205,252	133,660
1854.....	1,399,353	246,273
1855.....	1,198,573	148,740

4.—Navigation, (1855.)

Arrivals.....	619 vessels.	153,119 tons.
Departures.....	592 "	144,051 "

5.—Commerce with United States.

(From U. S. "Com. and Nav. Tables," 1846-55.)

	Exports from U. S.	Imports into U. S.
1846.....	\$185,425	\$799,213
1847.....	176,089	241,209
1848.....	233,928	1,026,097
1849.....	767,594	1,709,827
1850.....	1,064,643	2,653,877
1851.....	1,074,768	3,265,382
1852.....	799,117	2,691,097
1853.....	881,466	2,186,641
1854.....	761,725	2,144,971
1855.....	969,427	2,545,087

WEIGHTS AND MEASURES.

Old denominations.—Spanish.

New denominations.—French.

MONEYS.

The currency of Buenos Ayres is a debased paper money, the dollar of which is worth about 5 cents, but fluctuates.

OCCUPATIONS OF CHILE.

A census of Chile, taken in 1857, gave to that republic a population of 1,558,319 souls, including about 25,000 foreigners. The occupations of 439,582—males 231,105, and females 208,477—are given, and may be classified as follows:

	Males.	Females.	Total.
Merchants.....	11,150	203	11,353
Farmers.....	10,749	1,019	11,768
Shoemakers.....	10,412	797	11,209
Carpenters.....	9,449	...	9,449
Bricklayers.....	2,875	...	2,875
Spinners.....	157	60,193	60,350
Weavers.....	204	24,891	25,095
Blacksmiths.....	2,606	...	2,606
Tailors.....	3,433	6	3,439
Seamen.....	1,820	...	1,820
Military.....	3,868	...	3,868
Miners.....	17,430	218	17,648
Surveyors.....	47	...	47
Civil Engineers.....	77	...	77
Lawyers.....	282	...	282
Laborers.....	9,111	...	9,111
Day laborers.....	124,561	226	124,787
Washerwomen.....	9 (7)	19,952	19,961
Servants.....	13,644	16,820	30,464
Cooks.....	640	20,634	21,274
Sewing women.....	16 (7)	63,518	63,534
Male drivers.....	8,565	...	8,565

In 1855 the total population amounted 1,439,120, of which number 712,932 were males, and 726,188 were females.

CALIFORNIA GOLD.

The following table exhibits the sums total exported from California since the first discovery of gold in that State:

Years.	Value.	Remarks.
1848.....	...	No official statement.
1849.....	\$4,921,250	Statement defective.
1850.....	27,676,346	" "
1851.....	34,492,007	" complete.
1852.....	45,779,803	" "
1853.....	54,965,010	" "
1854.....	52,429,098	" "
1855.....	45,182,631	" "
1856.....	50,697,434	" "
1857.....	46,976,697	" "
1858.....	47,584,025	" "

These sums added together, make a total of \$411,704,301; but to obtain the whole amount of the actual product, a large supplement, say 33 $\frac{1}{4}$ per centum, must be added, covering the amounts carried away by passengers and not manifested, and the amounts retained in the State for current use, etc. With this addition, the sum total would be \$549,605,735, or since 1848, in round numbers \$550,000,000, or about \$55,000,000 per annum.

The following statement exhibits the value and places of destination of the gold shipped

from San Francisco for three years, ending 31st December, 1858:

	1853.	1857.	1856.
To New York....	\$35,578,236	\$35,287,778	\$39,765,294
England	9,285,739	9,347,748	8,666,289
New Orleans....	313,000	244,000	130,000
Panama.....	299,265	410,929	253,268
China.....	1,916,007	2,993,264	1,303,852
Sandwich Is'ds	96,672	86,803	241,450
Manilla	49,975	278,920	133,265
Australia.....	631	32,000	56,518
Mexico.....	14,500	41,500	.....
Chile	11,500	33,479	11,398
Society Islands	2,000	.....	5,300
Vancouver "	500	.....	.....
Other parts...	.....	220,296	125,500

Total \$47,548,025 \$48,976,697 \$50,697,434

The amount of California gold deposited at the United States mint and branches to the close of the year ending 30th June, 1858, has been as follows:

	U. S. Mint at Philadelphia	Branch Mint at San Francisco	Branch Mint at New Orleans	Branch Mint at Charlotte	Branch Office at Dahlonega	Branch Office at New York
Total.....	\$228,212,027	\$92,543,133	\$22,064,901	\$57,321	\$1,230,006	\$30,336,850

—making a grand total of \$424,464,240. During the same term of years, the amount of silver parted from the gold at all the mints was \$3,001,577.

IMMIGRATION INTO THE UNITED STATES.

In compliance with the act of Congress of 3d March, 1855, the Secretary of State has transmitted to that body a statement of the number, sex, age and occupations of passengers arriving by sea from foreign countries, during the year ending 31st December, 1858; together with the country in which they were born, and the country of their intended residence, and the number that died on the passage. From this paper we abstract the following interesting details of the movement:

1.—ARRIVAL OF PASSENGERS IN 1858.

Places.	Sex not stated.		Total.
	Males.	Females.	
Portland, Me.....	490	188	678
Passamaquoddy, Me.....	367	98	465
Portsmouth, N. H.....	17	19	36
Boston, Mass.....	5,635	3,712	9,347
Edgartown, Mass.....	27	11	38
Fall River, Mass.....	4	9	13
New Bedford, Mass.....	104	26	130
Bristol and Warren, R. I..	3	..	3
Providence, R. I.....	27	31	58
New York city, N. Y.....	62,243	39,399	101,642
Oswego, N. Y.....	828	264	1,092
Detroit, Mich.....	1,594	1,456	3,050
Philadelphia, Penn.....	1,270	1,321	2,591
Baltimore, Md.....	2,101	1,885	3,986
Newbern, N. C.....	2	1	3
Charleston, S. C.....	753	271	1,024
Key West, Fla.....	438	87	525
Mobile, Ala.....	65	31	96
New Orleans, La.....	8,091	5,157	13,539
Galveston, Texas.....	275	222	497
La Salle, Texas.....	16	17	33
San Francisco, Cal.....	5,298	499	5,797
Total.....	89,648	54,704	144,652

2.—DIED ON THE PASSAGE

To	Males.	Females.	Total.
Boston	4	3	7
New York city	106	94	200
Philadelphia	3	1	4
Baltimore	3	3	6
New Orleans.....	22	15	37
Total.....	138	116	254

3.—AGES OF PASSENGERS ARRIVED.

Age.	Males.	Females.	Total.
Under 5 years of age.....	5,219	5,134	10,353
Between 5 years of age and 10.....	4,451	3,935	8,186
" 10 " ".....	15..	3,916	7,375
" 15 " ".....	20..	12,296	23,332
" 20 " ".....	25..	18,273	29,538
" 25 " ".....	30..	17,801	25,371
" 30 " ".....	35..	9,952	13,785
" 35 " ".....	40..	7,652	10,895
40 years of age and upward.....	10,277	5,268	15,545
Age not stated	149	77	526
Age nor sex stated.....	..	..	300
Total	89,786	54,820	144,906

4.—COUNTRY IN WHICH BORN.

Countries.	Males.	Fem's.	Sex not stated.	Total.
England	9,092	5,546	..	14,638
Ireland	14,299	12,574	..	26,873
Scotland	1,134	812	..	1,946
Wales	189	127	..	316
Great Britain	6,798	5,258	..	12,056
British America	2,908	1,695	..	4,603
Portugal	109	68	..	177
Spain	1,108	174	..	1,282
France	2,134	1,021	..	3,155
Italy	689	200	..	889
Germany	23,901	18,390	..	42,291
Turkey	16	1	..	17
Sicily	59	35	..	94
Sardinia	167	90	..	257
Holland	128	57	..	185
Prussia	1,705	1,314	..	3,019
Belgium	118	66	..	184
Denmark	136	96	..	232
Norway and Sweden	1,293	1,137	..	2,430
Poland	6	3	..	9
Russia	135	111	..	246
Switzerland	653	403	..	1,056
Mexico	286	143	..	429
West Indies	518	129	..	647
South America	89	42	..	131
Central America	8	3	..	11
China	4,808	320	..	5,128
Australia	28	4	..	32
East Indies	2	3	..	5
Sandwich Islands	4	..	..	4
Cape Verde Islands	2	..	..	2
Madeira Islands	5	7	..	12
Azores Islands	193	96	..	289
Malta	2	..	..	2
Africa	10	7	..	17
United States	16,962	4,818	..	21,780
Not stated	92	70	300	462
Total	89,786	54,820	300	144,906
Born in the United States ..	16,962	4,818	..	21,780
Aliens	72,824	50,002	300	123,126

5.—OCCUPATIONS OF PASSENGERS ARRIVED.

	Males.	Females.	Total.
Merchants	10,217	..	10,217
Mechanics	11,995	..	11,995
Mariners	1,109	..	1,109
Miners	4,254	..	4,254
Engineers	165	..	165
Clergymen	132	..	132
Farmers	20,506	..	20,506
Clerks	259	..	259
Butchers	38	..	38
Bakers	74	..	74
Physicians	178	..	178
Lawyers	113	..	113
Masons	68	..	68
Manufacturers	74	..	74
Artists	44	1	45
Laborers	22,317	..	22,317
Millers	39	..	39
Tailors	156	..	156
Seamstresses and milliners ..	..	261	261
Weavers and spinners	40	40	80
Painters	31	..	31

OCCUPATIONS OF PASSENGERS—CONTINUED.

Shoemakers	117	..	117
Musicians	84	31	115
Teachers	45	1	46
Printers	19	..	19
Actors and actresses	27	6	33
Hatters	3	..	3
Servants	53	1,089	1,142
Other occupations	446	5	451
Occupation not stated	17,183	53,396	70,579
Occupation nor sex stated .....	..	..	300
Total	89,786	54,820	144,906

6.—TOTAL ARRIVALS, DEATHS AND EMBARKATIONS, ETC.

	Males.	Fem's.	Sex not stated.	Total.
Arrivals in the United States ..	89,648	54,704	300	144,652
Died on the voyage	138	116	..	254

Total number embarking at foreign ports for the United States during the year

1858	89,786	54,820	300	144,906
In transit	2,747	1,248	..	3,995

Net gain to U. S. 87,039 53,572 300 140,911

7.—PROGRESS OF IMMIGRATION.

A.—Arrivals from 1790 to 1843.

Years.	Arrivals.	Years.	Arrivals.
1790 to 1800	50,000	1830-31	23,074
1800 to 1810	70,000	1831-32	45,278
1810 to 1820	114,000	1832-33	56,547
1820-21	5,993	1833-34	65,335
1821-22	7,329	1834-35	52,899
1822-23	6,749	1835-36	62,473
1823-24	7,088	1836-37	78,083
1824-25	8,532	1837-38	59,363
1825-26	10,151	1838-39	52,163
1826-27	12,418	1839-40	84,146
1827-28	26,114	1840-41	83,504
1828-29	24,459	1841-42	101,107
1829-30	27,153	1842-43	75,159
Total 1790-1843	1,209,126		

B.—Arrivals from 1843 to 1858.

Years ending.	No. of Males.	No. of Females.	Sex not stated.	Total.
30 Sept. 1844	48,897	35,867	..	84,764
" 1845	69,179	49,311	1,406	119,896
" 1846	90,974	66,778	897	158,649
" 1847	139,167	99,353	990	239,482
" 1848	136,128	92,883	472	229,483
" 1849	179,256	119,915	512	299,683
" 1850	200,904	113,392	1,038	315,234
3 months. 1850	38,282	27,107	181	65,570
31 Dec. 1851	245,017	163,745	66	408,828
" 1852	235,731	160,174	1,438	397,343
" 1853	236,732	164,178	72	400,982
" 1854	284,687	175,587	..	460,274
" 1855	140,181	90,283	12	230,476
" 1856	135,308	89,188	..	224,496
" 1857	162,538	109,020	..	271,558
" 1858	89,648	54,704	300	144,652
Total	2,432,829	1,611,457	7,384	4,051,670
Tot. fm 1790 to '43				1,209,126

GRAND TOTAL from 1790 to 1858. 5,260,796

8.—ORIGIN OF IMMIGRANTS, 1820-1850.

(Exclusive of Americans returned from abroad.)				
Countries.	1820 to 1835.	1836 to 1850.	Total 1820 to 1850.	In U. S. Census of 1850.
England....	21,595	33,945	55,540	278,675
Wales.....	347	1,269	1,616	29,868
Scotland...	5,658	3,901	9,559	70,555
Ireland....	50,304	168,322	218,626	961,719
Not stated..	108,362	1,019,078	1,127,440	.....
U. Kingdom..	186,266	1,226,515	1,412,781	1,340,812
France.....	26,638	105,076	131,714	54,069
Spain.....	3,565	43,385	6,950	3,113
Portugal....	891	668	1,559	1,274
Belgium....	33	5,091	5,124	1,313
Prussia.....	433	16,092	16,525	10,549
Germany....	52,868	525,396	578,264	574,171
Holland.....	1,757	9,036	10,790	9,848
Denmark....	467	1,324	1,791	1,838
Swed. & Nor..	509	14,689	15,198	16,237
Poland.....	164	331	495	See Russia.
Russia.....	325	592	917	1,414
Turkey.....	23	64	87	106
Switzerland..	6,020	6,702	12,722	13,358
Greece.....	29	56	85	86
Italy & Malta..	2,339	2,336	4,675	2,679
Other Coun- tries of Continental Europe....	2	51	53	....
Total Conti't..	96,063	690,886	786,949	691,055
B. America..	6,677	51,156	57,833	147,711
S. America..	1,004	3,973	4,977	1,543
Con't. Amer..	147	372	519	141
Mexico.....	9,033	5,655	14,688	13,317
West Indies..	9,528	20,299	29,827	3,772
Tot. Amer..	26,389	81,455	107,844	168,484
Asia.....	46	99	145	1,135
Africa and Oceania....	546	500	1,046	1,139
All other....	...	...	...	8,214
Tot. Asia etc..	592	599	1,191	10,488

Recapitulation, 1820-1850.

U. King'm..	186,266	1,226,515	1,412,781	1,340,812
Continent..	96,063	690,886	786,949	691,055
Europe....	282,329	1,917,401	2,199,730	2,031,867
America...	26,389	81,455	107,844	168,484
Asia, etc...	592	599	1,191	10,488
Grand Total.	309,310	1,999,455	2,308,765	2,210,839

The total immigration of aliens to the end of 1858 has been:

Countries.	1820 to 1850.	1851 to 1858.	1820 to 1858.
England.....	55,540	220,298	275,838
Wales.....	1,616	5,377	6,993
Scotland.....	9,559	34,425	43,984
Ireland.....	218,626	664,887	883,513
Unclassed.....	1,127,440	273,353	1,400,793
United Kingdom.	1,412,781	1,198,340	2,611,121

TABLE OF IMMIGRATION—CONTINUED.

France.....	131,714	63,818	195,532
Spain.....	6,950	6,983	13,933
Portugal.....	1,559	887	2,446
Belgium.....	5,124	4,664	9,788
Prussia.....	16,525	37,673	54,198
Germany.....	578,264	817,619	1,395,883
Holland.....	10,790	10,148	20,938
Denmark.....	1,791	2,708	4,499
Sweden and Norway.	15,198	19,562	34,760
Poland.....	495	976	1,471
Russia.....	917	301	1,218
Turkey.....	87	69	156
Switzerland.....	12,722	23,265	35,987
Greece.....	85	29	114
Italy and Malta....	4,675	7,284	11,959
Other Countries....	53	...	53
Continental Europe..	786,949	995,986	1,782,935
British America....	57,833	50,632	108,465
South America.....	4,977	861	5,838
Central America....	519	437	956
Mexico.....	14,688	2,584	17,272
West Indies.....	29,827	5,397	35,224
America.....	107,844	62,911	170,755
Asia.....	145	32,518	32,663
Africa and Oceania..	1,046	2,516	3,562
All other Countries..	...	22,234	22,234

Grand Total.. 2,308,765 2,314,505 4,623,270

The above statement shows the number of persons of foreign birth, living in the United States in 1850, to be 2,210,839, and that the whole number of arrivals for a period of 30 years, prior to that date, to be 2,308,767. As it is by no means probable that only 97,528 deaths had occurred in this number in the meantime, there must, consequently, be some error, either in the census or in the records of the arrivals. It is altogether probable that the error is to be looked for in the census, as it is scarcely possible that there should be any considerable error in the number of passengers arriving, as the captain of each vessel is, by law, required to furnish a list of passengers, all of whom of foreign birth are subject to a capitulation fee.

COMMERCE OF PORTO RICO.

The following statement for 1856 and 1857 are from official returns:

	1856.	1857.
Value of Imports.....	\$6,571,159	\$7,999,006
" of Exports.....	5,371,804	4,429,349
Vessels arrived—No.....	1,375	1,454
Tonnage of vessels—tons....	184,526	176,921
Duties on exports and imports.	\$1,125,743	\$1,251,444
" on tonnage.....	126,446	109,836

MERCANTILE FAILURES IN THE UNITED STATES IN 1857-'58.

	No. of fail's in 1857.	Total am't of liabil's, '57.
<i>New York</i> —New York City, (in- cluding B'klyn & W'msburg..	915	\$135,129,000
Albany	35	538,000
Buffalo	72	4,224,000
Oswego	13	161,000
Rochester	31	850,000
Syracuse	29	436,000
Troy	24	1,607,000
Utica	20	585,000
Balance of the State	447	6,789,000
<i>Pennsylvania</i> —Philadelphia ..	280	32,954,000
Pittsburgh	28	1,183,000
Balance of the State	226	2,283,000
<i>Ohio</i> —Cincinnati	96	3,898,000
Cleveland	30	613,000
Balance of the State	229	2,357,000
<i>Indiana</i>	139	1,636,000
<i>Michigan</i> —Detroit	34	1,514,000
Balance of the State	98	1,004,000
<i>Illinois</i> —Chicago	117	6,572,000
Balance of the State	199	2,766,000
<i>Iowa</i> —Dubuque	36	735,000
Balance of the State	108	1,333,000
<i>Wisconsin</i> —Milwaukee	19	380,000
Balance of the State	101	1,244,000
<i>Minnesota and Territories</i> ..	63	1,705,000
<i>Delaware & Dist. of Columbia</i> ..	20	261,000
<i>Massachusetts</i> —Boston	253	41,010,000
Balance of the State	230	2,611,000
<i>Rhode Island</i> —Providence ..	35	4,564,000
Balance of the State	4	105,000
<i>Connecticut</i>	61	1,129,000
<i>Maine</i>	81	1,060,000
<i>New Hampshire</i>	70	928,000
<i>Vermont</i>	57	473,000
<i>New Jersey</i>	86	1,142,000
<i>Louisiana</i> —New Orleans	58	6,285,000
Balance of the State	5	246,000
<i>Missouri</i> —St. Louis	49	5,522,000
Balance of the State	29	433,000
<i>Maryland</i> —Baltimore	58	3,206,000
Balance of the State	41	725,000
<i>Kentucky</i> —Louisville	19	757,000
Balance of the State	31	1,007,000
<i>Virginia</i> —Richmond	30	781,000
Balance of the State	90	982,000
<i>Georgia</i>	32	925,000
<i>Arkansas</i>	7	309,000
<i>Alabama</i>	16	295,000
<i>Mississippi</i>	11	445,000
<i>Tennessee</i>	40	712,000
<i>Texas</i>	15	393,000
<i>North Carolina</i>	62	1,171,000
<i>South Carolina</i> —Charleston ..	31	922,000
Balance of the State	24	305,000
<i>Florida</i>	7	250,000
Total United States	4932	\$291,750,000
<i>Canada West</i> —Toronto	25	2,714,000
Balance of Canada West	109	2,172,000
<i>Canada East</i> —Montreal	15	523,000
Balance of Canada East	15	1,267,000
<i>Nova Scotia and New Brunswick</i> ..	22	1,375,000
Total U. S. and Br. Provinces. 5118		\$299,801,000

	No. of fail's in 1858.	Total am't of liabil's, '58.
<i>New York</i> —New York City (in- cluding B'klyn & W'msburg..	406	17,773,462
Albany	22	345,708
Buffalo	36	599,940
Oswego	8	73,600
Rochester	15	345,000
Syracuse	19	408,500
Troy	10	278,570
Utica	10	212,220
Balance of the State	340	4,315,620
<i>Pennsylvania</i> —Philadelphia ..	109	10,002,385
Pittsburgh	22	610,742
Balance of the State	232	4,647,656
<i>Ohio</i> —Cincinnati	51	1,345,533
Cleveland	17	255,000
Balance of the State	214	1,672,838
<i>Indiana</i>	127	1,154,684
<i>Michigan</i> —Detroit	27	1,047,924
Balance of the State	120	1,731,480
<i>Illinois</i> —Chicago	87	3,590,664
Balance of the State	305	4,978,210
<i>Iowa</i> —Dubuque	26	625,059
Balance of the State	94	2,196,122
<i>Wisconsin</i> —Milwaukee	21	314,475
Balance of the State	137	2,436,723
<i>Minnesota and Territories</i> ..	90	1,365,840
<i>Delaware & Dist. of Columbia</i> ..	46	277,150
<i>Massachusetts</i> —Boston	123	4,178,925
Balance of the State	128	3,937,792
<i>Rhode Island</i> —Providence ..	17	274,000
Balance of the State	13	273,923
<i>Connecticut</i>	89	2,213,430
<i>Maine</i>	61	646,051
<i>New Hampshire</i>	37	403,152
<i>Vermont</i>	40	278,720
<i>New Jersey</i>	60	775,500
<i>Louisiana</i> —New Orleans	45	3,465,000
Balance of the State	13	341,900
<i>Missouri</i> —St. Louis	22	782,980
Balance of the State	29	609,000
<i>Maryland</i> —Baltimore	76	2,442,640
Balance of the State	92	520,996
<i>Kentucky</i> —Louisville	18	555,462
Balance of the State	62	682,000
<i>Virginia</i> —Richmond	25	499,125
Balance of the State	244	2,183,500
<i>Georgia</i>	71	1,415,243
<i>Arkansas</i>	17	739,500
<i>Alabama</i>	48	2,038,752
<i>Mississippi</i>	36	1,053,000
<i>Tennessee</i>	103	1,597,015
<i>Texas</i>	28	467,432
<i>North Carolina</i>	90	1,499,400
<i>South Carolina</i> —Charleston ..	20	578,180
Balance of the State	21	249,900
<i>Florida</i>	6	142,440
Total United States	4225	\$95,749,662
<i>Canada West</i> —Toronto	16	383,376
Balance of Canada West	211	1,305,879
<i>Canada East</i> —Montreal	40	1,110,040
Balance of Canada East	22	616,770
<i>Nova Scotia and New Brunswick</i> ..	23	1,021,844
Total U. S. and Br. Provinces. 4537		\$100,187,571

COINS OF JAPAN.

Messrs. J. R. Eckfeldt and W. E. Dubois, in a letter dated 5th Feb., 1859, and addressed to the Hon. J. R. Snowdon, Director of the U. S. Mint, &c., have given an elaborate description of the coins of Japan, their contents, value, &c. At this moment, when public attention is much drawn to the subject of our intercourse with this unique nation, such a communication from official sources is timely and acceptable. They say:

"The series of Japanese coin consists of three sizes of gold, two of silver, and three of an alloy of inferior metal. In their shape, composition and relation to each other, they present some striking features, which set them apart from every other system of coinage in the world.

"The principal gold coin, known as the *cobang* or *cobank*, is of an oval shape, about two and a half inches long, and half as wide. It is very thin, soft and easily bent, having no elasticity; its appearance is that of fine gold, and its surface is marked by sundry figures not well understood as yet, although it is said that the flowery ornaments are 'the arms of the spiritual Emperor,' and that a certain central cypher is the special imprint of the 'Inspector-general of money.' The weight, two specimens agreeing, is 362 thousandths of an ounce, or nearly 174 grains. Next is a gold piece of one-fourth that weight, and intended as a quarter of the preceding, called the 'gold *itzebu*;' but its form is entirely different. It is four sided, rectangular, and very thick, three-fourths of an inch long, and half that in width. The smallest gold coin is the half *itzebu*, of proportional size. We have then the silver *itzebu*, and its quarter, of the same domino shape; the larger piece weighing 280 thousandths of an ounce, or 134½ grains. Passing to the third division, there is the 'hundred p'senny,' a casting of red brass, oval and thick, measuring two inches long, and a little more than half as wide, with a hole in the centre. Finally, there are pieces of four, and one p'senny, circular, with holes in the centre, and scarcely to be distinguished from the well-known Chinese cash.

"The composition of these coins, a subject falling within our particular province, has been to some extent examined. The *cobang* and *itzebu*, as was observed, have the appearance of fine gold, and, it is said, are regarded at home as being of high quality. But it is only necessary to scratch away the surface to discover

that the Japanese understand the process of pickling, well known to workers in jewelry, whether in America or Asia, or even in the centre of Africa. Trusting to the somewhat permanent effects of 'hard biting,' they have not even added copper to mitigate the whitening effect of silver alloy; the mixture being gold and silver, and not far from equal proportions. The *cobang*, two pieces assayed, gave 567½ and 568½ thousandths fine; the *itzebu* resulted 566. These figures indicate a designed, though probably a secret, standard. The consequent intrinsic values are, according to our mint rates, and allowing for silver contained, \$4 44 for the *cobang*, and \$1 11 (nearly) for the *itzebu*.

"It is interesting to observe that, although so ignorant of the methods of other nations, Japan has imitated, and even exceeded them, in the process of deteriorating money. About the beginning of the last century the *cobang*—quite similar in shape and device to the present piece—weighed 272 grains, was 854 fine, and worth just ten dollars. A century later it had fallen to 196 grains, 667 fine, and worth (including silver) five dollars and seventy-eight cents.

"The smallest gold coin has not been assayed; it evidently contains but little gold, and has therefore a forced valuation. The transition to the next piece in order, the largest silver coin, affords a fresh surprise. It is found to be of almost absolute fineness—that is, 991 thousandths—and is worth 37 cents. While this proves that the Japanese possess the art of refining, it does not explain why they debase the gold, and refine the silver. The smallest silver piece is apparently not inferior in fineness.

"The foregoing details will be interesting to the numismatist and metallurgist, but the fact which remains will excite a more popular attention. It is in regard to the legal relation which these coins bear to each other. Insulated from the rest of mankind, the Japanese have proportioned gold to silver according to their own ideas of use and state of supply. The gold and silver *itzebu* are, as is stated, interchangeable; that is, a piece which is worth in our eyes 111 cents (and to a Japanese worth nearly as much as two of our gold dollars, because he supposes it to be much better gold than it is,) buys no more than a piece which, with us, would be 37 cents. The Spanish or Mexican dollar they consider equal to three *itzebus*; which is three-fourths of a *cobang*, or \$3.33. The abundance of gold, or the scarcity of silver, which creates such a strange ratio, would no doubt be promptly corrected by foreign traders for the sake of the enormous profit. But, unfortunately, there

is a stringent law against the exportation of coin, which makes it very difficult even to get a few pieces for assay. For our facilities in this respect we are indebted to the perseverance of a gentleman who is interested in the collection of rare coins, and to his correspondent abroad.

"What relation the oval piece of brass, which passes for 'one hundred' bears to the itzebu, we are not informed. It weighs only about six times as much as the piece of one p'senny, and therefore bears an arbitrary value; unless brass is there held to be vastly more valuable than an alloy of copper and lead, which appears to be the composition of the coin which stands at the bottom of the scale."

ERRATA.

In the 10th and 11th lines from the bottom of the 47th page of the last number of the *JOURNAL*, in the column of figures under the head "feet above tide," substitute 2,100 for 1,100, and 1,970 for 2,970.

DEPARTMENT OF PUBLICATIONS.

BOOKS, MAPS AND CHARTS, ETC.,

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Acknowledgements of all donations to the Library will be made in the number of the *JOURNAL*, issued next after they have been received and entered.

The friends of the Society, and all desirous of facilitating the study of Geography and Statistics, are respectfully urged to send to the Library Rooms (Clinton Hall, Astor Place,) donations of books, atlases, maps and charts, whether ancient or modern, connected with these pursuits.

It is also important that the Society should possess a complete collection of all existing textbooks in Geography, and its cognate sciences; and the publishers of such works are requested to send copies thereof, so as to create a department of the Library for the special use and reference of teachers and others interested in educational matters.

SOUTH AMERICA—(Presented by *Henry V. Poor, Esq.*)

—Valley of the Amazon and the Atlantic Slopes. By M. F. Maury, L.L.D. Washington, 1853. 8vo., pp. 64.

—Explanation of a project for navigating the Magdalena River by steam. By John May. New York, 1855. 8vo.

BALTIMORE—(Presented by *Henry V. Poor, Esq.*)

—Baltimore as it is. By John C. Gobright, 1857. 1 vol., 12 mo., pp. 185.

BOSTON—(Presented by *Henry V. Poor, Esq.*)

—Report of the Receipts and Expenditures of Boston 1856-7. 1 vol., pp. 294.

MISCELLANEOUS—(Presented by *H. V. Poor, Esq.*)

—Railway and Commercial Information. By Samuel Salt. London, 1850. 1 vol., 12 mo. pp. 240.

—Manufacture of Ice on a Commercial Scale, etc. New Haven, 1857. 8vo., pp. 24.

—Rules and Regulations for Proceedings in Patent Office, Washington. 8vo., pp. 24.

ATMOSPHERIC MOVEMENTS—(Presented by the Author through the *New York State Librarian.*)

—Essai sur les ouragans et les tempêtes; et prescriptions nautiques pour en souffrir le moins de dommages possible. Par M. Lartigue. Paris, 1858. 8vo., pp. 136.

—Exposition du Systeme des vents, ou Traite du Movement de l'air sur la surface du globe, Par M. Lartigue. Paris, 1858. 8vo., pp. 80.

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—Accidents on Railways. London, 1853, '54, '55, '56 and '57. 5 vols., 4to.

—Railroad Reports for 1851, '52, '53, '54, '55, '56 and '57. London. 7 vols., 4to.

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—Minutes of the Committee of Council on Education. (Financial Report.) London, 1858. 8vo., pp. 852.

—Reports of the Com. of Railways. London, 1848, '49 and '50. London. 4 vols., 4to.

—Poor-Law Commission: Report for 1857. London, 1858. 8vo., pp. 248.

—Reports of the Officers of the Railway Department for 1841, '42, '43, '44 and '45. London. 5 vols., 4to.

GEORGIA—(Presented by *Gov. Joseph E. Brown.*)

—Historical Collections of Georgia. By the Rev. Geo. White. 1 vol., 8vo., pp. 688.

—Annual Report of the Comptroller. 8vo.

—Report of the Lunatic Asylum, 1857-58.

—Code of Laws for the government of Franklin College, (Univ. of Georgia) 1854. 8vo.

- Eleventh Annual Report of the President of the South-Western Railroad, 1858. 8vo.
- Treasury Report, 1858. 8vo., pp. 19.
- Deaf and Dumb Asylum: Report for 1858. 8vo., pp. 23.
- Southern Female College: Report for 1858. 8vo., pp. 24.
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- Lunatic Asylum: Report of Trustees, 1856-7.
- Western and Atlantic Railroad: report 1858.
- MINING—(*Presented by Henry V. Poor, Esq.*)
- The Mining Manual and Almanac for 1851, compiled by H. English. London, 1851. 1 vol., 12 mo., pp. 457.
- The Practical Miner's Guide: a treatise on mine-engineering, comprising a set of trigonometrical tables, (Budge's,) etc. New York. G. M. Newton, 1858. 1 vol., 8vo., pp. 192.
- KANAWHA RIVER—(*Presented by the Author.*)
- Report of the Improvement of the Kanawha River, and incidentally of the Ohio by means of artificial lakes. By Charles Ellet, Jr., C. E. Philadelphia, 1858. 8vo., pp. 125.
- ANTIQUARIAN SOCIETY—(*Presented by the Amer. Antiq. Society, Worcester, Mass.*)
- Proceedings of the American Antiquarian Society at the meeting held in Worcester, 21st October, 1858. Boston. 8vo.
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- Butler Hospital for the Insane: Reports for 1856, '57 and '58. 8vo., pp. 28, 34 and 16.
- Treasurer-General's Report for 1858. 8vo.
- Providence Reform School: Reports for 1856, '57 and '58. 8vo., pp. 32 each year.
- Public Schools of Rhode Island. By Henry Barnard. Providence, 1849. 1 vol., 8vo., pp. 560.
- Public Schools: Reports for 1855, '56, '57, and '58. 8vo., pp. 248, 96, 108, and 40.
- Reports of the State Auditor, Feb. 14, 1857 and '58. 8vo., pp. 22 and 16.
- Rhode Island State Prison: Inspectors' Reports for 1853, '54, '55, '56 and '57. 8vo.
- Banks and Savings Institutions: Reports for 1853, '54, '56 and '57. 8vo., pp. about 32.
- Acts relating to the Public Schools of Rhode Island, etc. Providence, 1857. 1 vol., 8vo.
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- Domestic Industry: Transactions of the R. I. Soc. for the Encouragement of. Providence. 1 vol., 8vo., pp. 132.
- Colony of Rhode Island and Providence Plantations: A Census of the Inhabitants of, (in 1774.) Providence, 1858. 1 vol., 8vo., pp. 240.
- Registration Reports (Births, Marriages and Deaths) for 1853, '54, '55, '56 and '57. Providence. 5 vols., 8vo.
- Geological and Agricultural Survey of the State of Rhode Island. Providence, 1840. 1 vol., 8vo., pp. 312.
- UNIVERSAL GEOGRAPHY—(*Presented by Frank Moore, Esq.*)
- Philippi Cluverii Introductionis in Universam Geographiam, tam veterem quam Libri vi Tabulis æneis illustrati. Accessit P. Bertii Breviarum Orbis Terrarum. Amstelodami, ex-officina Elzeviriana, 1672. 1 vol., 48mo., pp. 394.
- OHIO STATE DOCUMENTS—(*Presented by the State of Ohio through W. T. Coggeshall, Esq., State Librarian.*)
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- Map of Central America. By Don Fermin Ferrer. New York, 1859. (Mounted) 48x 36 inches.
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- Annual Reports of the Governors of the Almshouses. New York, 1851, '52, '53, '54, '55, '56 and '57. 7 vol., 8vo.
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- Governo Pontificio: Ragguaglio delle cose operate nel ministero del Commercio, Belle Arti, Industria, ed Agricoltura durante l'anno 1856, e per i lavori pubblici nelle anno 1855. Roma, 1857. 4to., pp. 202.
- Regolamento provvisorio di commercio finora vigente nelle provincie di seconda Ricupera e modificato secondo le presserizioei dell'editto del primo gingo 1821, etc. Roma, 1821. 8vo., pp. 144.